SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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Original Correspondence.

THE ROYAL COMMISSION ON MINE ACCIDENTS—No. IV.

SIR,—The most prominent questions relating to the safety or non-safety of working coal mines having been considered—such as the fluctuations of atmospheric pressure and their influence on the production of carburetted hydrogen gas—the utility of a comparatively new invention, the "Indicator," which shows the percentage of fire-damp in mixture with the air, as low as ¼ per cent.; the use of blasting apparatus safer than gunpowder, the latter up to the present time being the principal explosive used even in fiery mines; a safety-lamp combining the elements of portability, affording sufficient light, and proving safe in an explosive atmosphere, either at a high or low velocity; and, lastly, the different ventilators, a comparative statement of furnace and mechanical ventilators having been given in Letter No. III. Besides this there is a variety of detail in the daily routine of working to be attended to, requiring not only carefulness, but the exercise of judgment in the officers as well as the workmen of coal mines; so much so that we deem it requisite to bring these points briefly under notice.

In the Special Rules of every colliery—to prevent dangerous accidents, and provide for the proper discipline of those employed—the duties of viewers, overmen, deputies, and master-wastemen are laid down with great care. The deputies of mines in the North of England are responsible for the mine in the absence of the overmen; they see that no naked lights or unlocked safety-lamps are taken past the "Caution" board. They examine and lock every safety-lamp before it may be taken beyond the "Caution" board. They descend before the men, and, going with the air, examine with a safety-lamp all the working places, fencing off any dangerous places that may be found. They are responible for timbering and bratticing the working places, so as to afford the greatest possible safety to the workmen. They report any deficiency of timber, brattice, or other necessary material. They keep in good repair the doors, of wood or sheet, the brattice, and fencing, and the tramway in a working condition. They are not to allow smoking in the mine, nor any workmen to have smoking apparatus, matches, or lamp-key in his possession. They fire all the shots where safety-lamps are used, first examining the place where a shot is to be fired, and the contiguous places. In drawing juds safety-lamps must be used, and in many collieries this is performed in the night-time, when the pit has ceased working. Should an effusion of gas take place the deputies, in the absence of the overmen, are required immediately to withdraw the workmen from the parts of the mine thus affected, report the same to the overmen, and enter such occurrences in a book or log kept for the purpose. The deputies examine daily the edges of goaves and working juds. They send out of the mine anyone injuring a lamp, door, or bratticing, or propping back or fastening any door that is used for ventilation. They are required to make a report of the state of the mine—each for his district—in the report-book daily, and to travel the air-courses once every quarter year, so as to make themselves thoroughly acquainted with the airways generally.

The master wasteman has the responsible charge of the return air-ways; he travels all parts of the same once in a week, ascertaining if they are free from fire-damp and a proper quantity of air in circulation, the air-ways of adequate area, that locked safety-lamps only are used in the waste. He examines all doors, stoppings whether of stone or wood, air crossings and regulators, for the apportioning of air to each district. He examines frequently goaf edges, intake and return airways, and enters all these matters in a report-book, which is given daily to the viewer or manager.

These duties embody the principal measures that are taken for safety in the carrying on of coal mines, most of them being of vital importance. The most prominent are the examination of every place in a mine by the deputies before the workmen enter, which should be rigidly enforced, and executed only by careful and reliable persons. Another is the frequent examination of goaf edges by overmen, deputies, and wastemen. Experience teaches that fire-damp sometimes issues from these localties as quickly and sometimes sooner than mercury falls in the barometer, thus giving warning, and betraying its intention of spreading over a greater or less extent of workings, or fouling the airways to a dangerous degree. This, however, is not iikely to occur in a well-ventilated mine. The greatest danger arises from a sudden issue of gas occasioned either from a heavy fall of stone in the goaf, or from a blower, and for these the best preventive of accidents is a good safety-lamp. We do not class under this head those lamps which readily pass the flame, and explode the outside atmosphere in a current of 6 ft. to 12 ft. per second. There is no prohibition to the use of such lamps in coal mines; as a matter of safety, however, it is highly desirable that all safety-lamps should fulfil certain conditions in affording security to the workmen. These conditions have been explained in Letter No. II. There can be no question on this point, that only such lamps as stand the test of safety in a strong explosive current, and are self extinguishing, should be allowed in the lighting of fiery mines. Mining men, as a rule, are wedded to old customs and usage; it is, however, of the highest importance that the lamp question should be placed on a more secure basis than it is at present. Explosions have been accounted for by supposing that an effusion of gas has taken place, causing the lamp-gauzes to become hot and pass the flame, or someone in fright has rushed away with his lamp with such speed as to cause the flame to pass through. Accidents will surely occur unless such lamps are prohibited, and proper safety-lamps introduced.

The dates should be kept of the occurrence of all colliery explosions, not only great and fatal accidents, but also small ones, whether attended with loss of life or not. The dates, also, of large effusions of gas from goaves, &c., and also particulars of dryness and dustiness of seams (which will form the subject of another letter). These, taken in connection with barometrical pressure and and the condition of the atmosphere would give a clearer and better knowledge of the influence of atmospheric changes. It has been stated that boisterous weather or southerly winds had so great an influence on the state of a mine in South Wales that in those states of the weather the air became foul to a dangerous degree—so much so, that the workmen were withdrawn and brought to bank. A fiery coal mine has to be viewed in various aspects. At one time it may appear to be perfectly safe, no fire-damp observable either in returns or goaf edges; but this condition of things may be soon changed by a sudden issue of gas, or by atmospheric changes, as stated above, showing the necessity of constant vigilance and supervision on the part of those to whom is confided the responsibility and daily oversight of a mine, as overmen and deputies, whose duties have been explained already. A casual inspection by an experienced engineer or by a party of workmen may be of great service now and then; but, as has been shown, a coal mine requires, above all, an efficient daily supervision, with the most approved appliances for lighting and ventilating it.

The Coal Mines Regulation Act of 1872 includes the General Rules. This Act sets forth the duties of inspectors and managers of mines, restrictions as to females and youths being employed underground, also as to aboveground, requires two shafts or outlets to every mine, and abandoned shafts or entrances to be fenced. Penalties are imposed for breaches of the general and special rules. The Act requires accurate plans, also plans of abandonment, notices as to new managers, as to accidents from explosion, &c., or any death resulting from these. Regulations as to employment of boys in thin seams.

The General Rules require that an adequate ventilation shall be produced. The inspection of gaseous mines once in 12 hours if two shifts of men are employed, and once in 24 hours in non-gaseous mines. Places not in course of working to be fenced off. In case of danger from inflammable gas prevailing, every workman is to be withdrawn from the dangerous part of the mine. Provision as to safety-lamps and lights; provision as to gunpowder or other explosives, the latter not to be stored, nor to be taken into the mine except in cases containing not more than 4 lbs.; iron or steel prickers are not to be used in charging holes; a shot is not to be fired except by a competent person in a mine producing inflammable gas, nor until the places have been examined, and it is found safe to do so. The remaining provisions refer to water and bore holes, places of refuge on engine roads, fencing of the top of pits, securing the sides of pits, and the roofs and sides of airways, appointing of enginemen, to signalling in pits and guides, cover and chains for cages, drum and rope, break and indicator, fencing of machinery, safety valve and gauges to boilers, barometer and thermometer indications of, daily inspection of head gear, ropes, chains, &c., and inspection of the mine by two workmen once in every month is provided for.

M. E.

COLONEL SHAKESPEAR ON SAFETY-LAMPS.

SIR,—Last week I raised the cry of shame at the too common and piteous haggle to save halfpence out of safety-lamps at the cost of quality and efficiency. As a prominent case in point let me name the fact of iron-wire gauze being used instead of copper-wire gauze. Ask any person connected with safety-lamps why that is so, and the reply will be at once made—It is cheaper! Now, it certainly is *one* penny per gauze cheaper in one sense—*i.e.*, an iron-wire gauze may cost 6d., and copper 7d., but inasmuch as old iron-wire is valueless, copper is copper still, and worth its weight in coin as such, and when sold as metal would realise accordingly. The weight of copper in my gauzes is exactly that of eleven pennies, copper gauze is, therefore, the cheapest. Let us get rid of the penny haggle and buckle to the real question—Which is safest, copper or iron?

Under this head the matter seems quite clear, as I will now try to demonstrate. Those metals which are the best conductors of electricity are also the best conductors of heat. As a conductor of electricity we all know that copper is universally used; iron is not half so good a conductor. As an excellent conductor of heat copper is superior to iron in a greater proportion than 2 to 1; therefore it may be argued that when all other things are equal copper gauze is safer than iron gauze in the proportion of 2 to 1. It is quite as well to at once anticipate the objection some will make that copper gets hotter than iron. Now, it is quite true that the copper feels hottest to the fingers, but that is because it runs the heat out of the lamp into the fingers all the quicker. As neither metal generates the heat it follows that copper permits less heat to remain in the lamp than does iron. But metals that heat quickest also cool quickest; in fact, while copper conveys and disperses heat out of the lamp the same amount of it is by comparison accumulated and stored by iron. It is motion that produces danger in one way, and it is coolness that gives safety, but there is always motion of some sort, and the most gentle motion keeps copper gauze much cooler than iron.

I never could make my dear old father believe that marble felt to him cold simply because it took heat out of his fingers. May I hope to convince people that copper-wire gauze is safer than iron-wire gauze, simply because it conveys heat quicker into their fingers. My argument amounts to this—that of two lamps, all other things being equal, the one with copper retains less heat than that with iron. Cool gauze gives safety by reducing the heat of flame to a temperature below which flame cannot exist; the gauze that passes off heat the quickest is the coolest, and therefore the safest. As an experiment, have two gauze chimneys of the same size, one of copper and the other of iron. Stand the iron one over a lamp flame, the point of which shall be 3 or 4 inches below the top of the gauze, take a lucifer match that "ignites only on the box," as they do not contain phosphorus, and put it on the top of the gauze, immediately over the flame, and it will quickly explode. Now do identically the same with copper gauze, and see the difference—the lucifer will remain unharmed.

J. D. SHAKESPEAR,
Baron's Court, Fulham, May 28. F.G.S., Assoc. M. Inst. C.E.

THE MINERS' STRIKE.

SIR,—*En resumé* of my correspondence in the Journal of last week permit me to notice the umpire's award just issued relating to a demand of 12½ per cent. reduction made four months since by the South Yorkshire and North Derbyshire Coalowners' Association, which "considers the masters have not made out their case, and wages are not too high." In the Journal of January 4 last I thus addressed you—

"The coalowners have pursued a suicidal policy in sending their output by rail to London, which is the chief cause of the existing distress. However large their direct interests may be their thousands of dependents—the miners—look up to their employers as faithful stewards of the trust confided to them by our common, omnipotent, and omniscient Father. If it be true that their coal can be delivered in the Metropolis several shillings a ton under what they are mulcted by rail and under Tyne transit, and notwithstanding that the coalowners continue to send by rail, and reduce the miners' wages, I am at a loss to perceive the distinction between such action and that of withholding the labourers' wages, which crieth to heaven for vengeance. I withhold for to-day laying bare the insiduous influences at work, the perpetrators of which will meet with well-merited retribution. "Habet Deus suas horas et moras." Without indulging in joyous paeans for the moment the miners can rest assured of the impending perfect discomfiture of the leaders who have foolishly arrayed themselves against public opinion and justice. There is not the least difficulty in coming to an equitable adjustment with a committee of coalowners neither directly nor indirectly connected with railways whose coal traffic to the Metropolis is doomed to be displaced by the incomparably cheaper sea transit, so proved by their own unimpeachable evidence."

In whatever light you view the actual state of coal mining in this country impartial observers must arrive at the conclusion that the future is fraught with disaster if no change intervenes. The first step is to displace railway insensate transport by the legitimate canal, fluvial, and sea routes. WILLIAM JOSEPH THOMPSON.

20, *Little Tower-street, May* 27.

COAL TRANSPORT TO LONDON.

SIR,—If the anonymous writer of a letter with above heading signed "Consumer" in your last week's Journal had perused mine in the Journal of Oct. 19 last, which stated—"This is not the first time I have had to explain that it was never contemplated when rendered compulsory to convey the coal by rail to the shipping port, to do it otherwise than, as usual, in bulk. No sane person would propose to fill the sacks at the pit for rail conveyance," &c.; he would have eschewed many *mal-sonnant* inferences, exaggerations, and invectives. Out of respect for your old-standing, high-class Journal I have in this instance noticed an anonymous effusion—*Une fois pour toutes*. I base proposed system upon the highest class data, which I have invariably adduced. The South Yorkshire and Hull Extension Bill furnishes evidence of coal carried by rail suffering a deterioration of 1s. per ton, even for a very short distance, as compared with waterborne, on account of the grinding and trituration inseparable from rail transport. An Admiralty report states, "Welsh coal ought never to be screened on account of its very brittle nature, but handpicked," than which nothing can be more favourable to my system of conveyance in sacks direct from the pit to London by canal, fluvial, and ocean navigation from South Wales, as well as from Yorkshire, insuring immunity from breakage. The Journal des Mines estimates the loss through breakage in local transport to Paris at 3 frs. a ton, the Parliamentary evidence of Mr. Cory and Mr. Cockerell, rather less for relative distance to London. The highest practical authority (the member for North Durham) gave evidence before a Parliamentary Committee that coal on shipment is subjected to a fall of 15 to 25 ft., totally at variance with "Consumer's" allegation of scarcely any breakage in shipment. The proceedings of the British Association at their Newcastle meeting show that "in point of dispatch the hydraulic, as well as the gravitation system in the loading of coal are limited (through want of end to end hatches) by the labour of trimming the coal in the hold of the vessel." I dare not trespass more upon your valuable space by recapitulating the contents of my letter of Sept. 14, wherein I showed the very great detention inseparable from existing screw colliers, which the proposed system obviates. As to loading, discharging, and delivery, I have based my calculation upon a fourfold excess of delay of the guarantee of an eminent engineering firm who have erected numerous direct-action cranes, the aggregate expense and time occupied in loading, discharging, &c., being considerably less than under existing system, with immunity from breakage when waterborne in sacks. As to "Consumers" vaunted dispatch on the railway wagon system, Captain (now Sir Henry) Tyler's report on the working of the railways of the United Kingdom estimates—"Mineral trucks are not kept running one-sixth of their time." Observe the shunting, underway, and the delay at King's Cross, &c., and the immense outlay for sidings inseparable from the coal traffic for shunting, &c., I reiterate my desire to meet any practical remarks of legitimate enquirers in a spirit commensurate with the importance of an undertaking destined to displace the entire coal traffic of the Great Northern from Yorkshire, Nottinghamshire, and Derbyshire, as well as that of the Great Western, and London and North Western from South Wales to the Metropolis through an immense saving on cost of sail transport, the former shipped optionally in sacks or in bulk, the latter exclusively in sacks. With the evidence of the chairmen and general managers of the great coal carrying railways to London that railway transport cannot compete with seaborne, I conclude, flattering myself you will pardon me for trespassing so much on your valuable space. WILLIAM JOSEPH THOMPSON.

20, *Little Tower street, May* 28.

BOILER EXPLOSIONS.

SIR,—I am sorry to find Prof. R. Hunt has misapprehended the tenor of my remarks at the discussion on Boiler Explosions, referred to by him in last week's Journal. So far from supposing that distilled water represented the "spheroidal water" of Bontigny and Donay I contend for the contrary, and that were really two distinct questions before the meeting—the one in reference to the effects of water deprived of air, and the other as to the possibility of the formation of sphereoidal water in steam-boilers, under such circumstances as the explosion of the West Tolgus boiler.

Mr. Loam had stated that Mr. Hunt says, in reference to Cagniard de la Tours' discovery—"From this experiment we learn that did water exist in any other condition than that in which we find it even with the apparently simple difference of containing no air, it would not be safe to employ it in any culinary or manufacturing operation, since its use would be followed by explosions as dangerous as gunpowder."

I stated in the discussion that when this statement appeared in the public prints I was for some time deterred from the adoption of a valuable process, fearing to venture on the use of distilled water deprived of air; but that, on further consideration, I ventured to make the experiment, and had never found the slightest indication of any danger being incurred from the use of water deprived of air.

These results were so completely in opposition to the warning given by Prof. Hunt, and revived by Mr. Loam, that I thought it important to remove one of the obstacles to the proper consideration of the causes of the explosion of steam-boilers.

Plymouth, May 27. ROBERT OXLAND.

THE HULTAFALL MINES.

SIR,—With the recollection of the various statements which have been made by the promoters and others in letters to the *Mining Journal* of the extraordinary wealth of these mines shareholders may be excused for feeling a little impatient for some realisation, if not yet very brilliant, of all these fine promises. No more decisive statements as to the certainty of grandly successful results have ever been made in my experience in the bringing out of any mine, but as yet these results are *nil*. Nearly two years since we were told of "thousands of tons of ore laid open," and in another letter thousands of pounds worth (4000*l.*) of mineral in sight, yet withal again the results are so far *nil*. There is this hope for the shareholders—that as the gentlemen who reported on the mines, and those also concerned in the promotion, are of eminence and high standing in their respective vocations such consideration may seem a guarantee for an honourable and able prosecution of the business, for their reputation will certainly sustain extreme damage should a *fiasco* after all occur. I cannot fancy any more crushing blow to mining investments and speculation than any such result. I may just remark the extreme surprise with which I have observed the public apathy on the subject of the expenditure (as shown in the last balance-sheet) of these mines, not the smallest explanation having been vouchsafed of the excessive sum of nearly 6000*l.* in labour alone in one year. This sum, which would be equal to 15,000*l.* worth of labour in England, is put down in the balance-sheet, but no details whatever are given, nor any indication in the few and meagre reports which were sent in of the amount of labour which was being employed. How is it men will scrutinise so narrowly the expenditure of their money in other forms, and so judiciously look into each item, and yet be so apathetic and negligent when they put their money into an underground enterprise? An enigma to me.—*May* 27. X. Y.

P.S.—There can be no question I imagine as to the real and great value of the mines, and as the dressing difficulties have now been solved by the present able manager, and the money has been subscribed for the due prosecution of the work, we can only attribute it to the present wretched prices for metal that more tangible results have yet appeared. Let us all hope for the speedy advent of a Liberal administration to brighten up trade generally, and give the miner a better return for his produce, and the investor a better quotation for his shares.

MINING IN COLORADO—PARK COUNTY.—No. VII.

MOSQUITO CREEK.—Fifteen years have now passed since the old town of Mosquito commenced its decadence. Its rise was a rapid one, like all mining camps where gold is the exciting influence. About 3000 people congregated, built a village of over 200 houses, stamp mills and arastres. Placer works were the chief operations. Many lodes were discovered, and all carrying gold on the backs in the gossan, the same as in the adjoining creek of Buckskin, noticed in my article No. 5 of this series. Many mines were opened, and in two or three of them quite extensive works were carried on. All these people worked for gold only; they had no idea of the value of silver or copper, and although the quantity of ore was abundant its yield in gold was so low that it would not pay expenses. From what has since been ascertained the amalgam was only worth $8 per ounce in gold, being alloyed with silver and copper, while the stream gold was worth $20 per ounce. This, however, was in small proportion to the great bulk of mineral, for the alluvials were shallow, and before 1865 the inhabitants had nearly all dispersed, and sought pastures new. From its entrance to its head at the foot of the snowy range the valley is crossed by numerous lodes, having a north-east course generally. They may, however, be taken in two main groups; these are five miles apart. The valley is from 500 yards to ¼ mile wide, narrowing as it approaches the mountains.

The bounding ridges, which present for two-thirds their height mural cliffs, present a fine geological section; they are very nearly 2000 ft. in height above the valley, or 12,500 ft. above sea level, at their greatest altitude; they are spurs of the main range. The formation is Silurian below and Devonian above. There are only two systems, which are very distinct, the one being vertical and the other nearly horizontal. The Silurian consists of granite, gneiss, quartzite, syenite, talcose schists, horblende, dirorite, porphyry, greenstone, and mica schists. The Devonian of sandstones, argelaceous and silecious limes, quartzite, shales, and trachyite, with some abnormal masses of blue porphyry, and heavy beds of ferruginous grits.

The entire of this latter system is more or less stratiform. The ore lies in seams or beds, following the ordinary dip of the strata, which varies from 12° to 25°, and in thickness from 6 in. to 6 ft. It is seldom uniform for any great distance; there are numerous fissures cutting these strata, forming little veins, and where they intersect the seam the deposit of ore is much enriched. They all emanate from the lodes in the Silurian rocks below, but never sufficiently strong to form lodes in themselves. The gangue is sulpuate of baryta, calcite, ferruginous lime, alumina, and carbonaceous earths.

The ores are silver, lead, copper, zinc, blende, and sulphuret and black oxide of iron, with some little antimony and arsenical pyrites, but the two latter are of small proportion, and in some samplings scarcely a trace can be found. The silver ranges from 30 to 700 ozs. per ton. Nothing less than 40 ozs. is ever sent away, as the local smelters pay nohting for ore of this grade, and seldom anything for the lead or copper in the highest grades. The average shipping ores may be set down at 175 ozs. to the ton of 2000 lbs., which now

realises $1 per ounce. The lodes in the Silurian rock below are well defined; they vary from 3 to 15 ft. in thickness, carrying gold, lead, silver, and copper, and in the two latter metals they are very rich. I have recently valued one that run over $3000 per fathom. An old mine called the Orphan Boy contains some beautiful ore; it was very similar to Wheal Friendship, Tavistock, in my younger days, but without its big wheel and its heavy flow of of water. To appearance the ores are identical, but the Orphan Boy ores assay 1½ oz. in gold, 60 ozs. in silver, and 20 per cent. in copper, with about 10 per cent in lead. Above this is the Kansas and Good Samaritan mines, but in the limestone they are very productive. Their best average samplings run 250 ozs., and the second-class 120 ozs. No third class is sold; these await some English smelters to purchase them, and I hope a reduction works on the humid principle will be erected in this valley soon. There is an immense fortune for the promoters of such an enterprise, and the same at Montgomery, for guarantees will be entered into to supply them with 100 tons a day each.

A very singular discovery has been made in this locality recently. An old prospector, one of the early ones, who, like many others are now coming back, sunk a few feet in one of the old shode pits, and struck a vein of something. It was sent to one of our assayers, who pronounced it to be worth $6000 per ton. No analysis having been made other than a mere assay for gold, we know little about it. This week the old man came into town and brought some samples to my office, which are very beautiful. They are of two kinds, solid and granular. The solid ore is certainly a nickoliferous pyrite, with about 25 per cent. of grey copper rich in gold. The soft or granular stuff is a calco-sulphate of alumina, full of fine prills of gold. It is very rich. When I have been up and examined the vein, if it is a vein, I will make an analysis and report. At present I cannot afford the time as our busy season is coming on. Hundreds of men from all parts of the United States are flocking into Colorado. In my next I will continue my description of Mosquito Creek and its mines, for they are well worthy of notice, and I believe among the very richest in the country.

Alma, Colorado, May 8. CHARLES S. RICHARDSON, G.M.E.

COPPER, AND SILVER.

WHICH CAN BE MINED AND WORKED MOST PROFITABLY?

SIR,—In reference to my former communication on this subject the following estimates will show what may be done by working the copper ores of this southern portion of the territory, and it is really inexplicable, with such facts staring them in the face, that capitalists should persistently ignore copper and confine their operations to the more risky though attractive mining (and speculation) in gold and silver properties. Even our usually wide-awake prospectors apparently fail to perceive that copper ore assaying 25 per cent. is worth $75 per ton, and is free from the drawbacks attending silver in the shape of a depreciated standard; imperfect reduction involving a loss of (say) 25 per cent., besides loss of mercury, high rate of expressage, &c. While ores as low as 8 per cent. may be worked by the Hunt and Douglas system, the high grades may be smelted, preferably, in water-jacket, copper-plated, or other improved furnaces, or even shipped in the crude state when exceeding 50 per cent. It should also be borne in mind that copper mines are not, as a rule, so liable to give out as those of silver or gold, while the metal is equally marketable. Its price also being now at a minimum, the probabilities are greatly in favour of a rise ere long. High grade magnetic and hematite iron ores are found in the vicinity of many of our rich copper districts, often in immediate proximity with the copper mines themselves, which will furnish the material for producing the spongy iron required in the absence of scrap-iron to precipitate the copper.

Estimate of capital required to purchase copper mines, erect plant, and work 20 tons of ore per day by wet process:—

Plant—for copper.	
Pulveriser	$ 2,000
Furnace (roasting)	2,500
Tanks	3 000
Engine and boiler	5,000
Pumps and other small appliances	1,000
Buildings	1,000
Refining furnace	1,500
Hunt and Douglas' royalty	1,000
Office and assay fittings	500
For sponge iron.	
Crusher	2,000
Frue's concentrator	1,000
Retorts	1,500
Receivers, &c.	500
Buildings	500
Total	$23,000
Labour—working expenses per day.	
Superintendent	$ 20·00
Assayer and clerk	10·00
Foreman	8·00
Two engineers	10·00
Two assistants	6·00
Two grinders	6·00
Four roasters	12·00
Four smelters	12·00
Eight tank men	24·00
Material.	
3500 lbs. salt	87·50
7500 lbs. iron	187·50
10 cords wood	50·00
Candles, oil, wear and tear, &c.	20·00
Miscellaneous.	
Mining 20 tons per day	40·00
Hauling	100·00
Freight on 5 tons copper to San Francisco, New York, or Liverpool, *via* Gulf of California	250·00
Daily disbursements	$ 843 00
5 tons copper	1500·00
Daily profits	$ 657·00
Or $32 85 profit per ton of ore.	
Capital required.	
To buy copper mines—say	$25 000
Erect plant	23,000
Opening mines, road making, and other preliminary expenses	16,740
First month's expenses	25,260
Total	$90,000
Profits.	
On 12 months' working	$123,652
Deduct for contingencies, 50 per cent.	61,826
Net annual profit	$61,827

Which on an outlay of $90,000, is 68·7 per cent. per annum.

ADVANTAGES OF COPPER OVER SILVER MINING.—Silver is not being worked beyond 70 or 80 per cent. of its assay value, and when obtained has to be sold at a discount of 20 per cent., and pays in express charges and commissions another 5 per cent., making a total deduction of (say) 50 per cent. from assay certificate, in addition to mining and reduction charges.

Example—assay value $100 per ton:—

Mining—say	$ 2·00
Hauling	5·00
Reduction	30·00
Loss in reduction	25·00
Discount, 20 per cent.	15 00
Expressage, &c., 5 per cent.	3·75
Total	$80·75

Leaving a profit of $19·25 per ton of ore.

Copper, on the other hand, can be worked to ½ per cent. of its assay value, and is sold at its full market price without discount, paying ordinary merchandise freightage, being unattended with risk of robbery.

Example—assay value, as above estimated on 25 per cent. ore, $75 per ton; mining, hauling, reduction, and freight to market, $42·15, leaving a profit of $32·85 per ton (43 80 per cent.), or more than double the profit obtainable from silver ores of the same assay value. W. T. RICKARD, F.C.S.

Assay Office, Tucson, Arizona Territory, U.S., May 2.

SILVER DISTRICT—YUMA COUNTY, ARIZONA.

NEW DISCOVERIES—SILVER GLANCE MINE—IRON CAP MINE—ENGINEER MINE, ETC.—GEOLOGICAL FORMATION AND CHARACTER OF THE ORE.

SIR,—From reliable reports on the examination of the prominent mines recently discovered in Silver District, one cannot help forming a high opinion of its future importance and productiveness. Its characteristics were found greatly exaggerated in some respects, and equally underrated in others. The main ore channel extends for several miles, its croppings marked by a striking uniformity in appearance and material. On the west side the country rock appears to be protogine or talcose granite; on the east the formation is essentially volcanic, basalt, lava, and scoriæ forming its hills, and in many places overlying the ore veins. This ore channel has the position of a continuation of the mineral belt running through the old Eureka district; but its gangue and the composition of its ores mark it as something different and distinct. At the southern end of the ore channel are huge croppings of the Black Rock and Pacific, forming the southern, eastern, and northern sides of a great basin cut through by an arroyo or wash; while the Engineer croppings form its western wall. This basin is shaped somewhat like the oblong crater of a volcano, cut through on two sides by some stream. On either side of it the ore stands up, to heights reaching 100 ft. and upwards, of thickness not yet determined, though exposed in places to a width of 10 ft. to 30 ft. This huge mass extends for nearly 3000 ft. on the two mines first named, and must comprise several thousands of tons of ore good enough to pay for reduction. Its general character can only be determined by breaking open boulders that have rolled down from it, and from inspection of the small openings that have been made into it. While nearly all of it yields an appreciable assay in silver and lead, at least half of it is practically barren. The richer ores are scattered in kidneys and tortuous seams throughout the great mass of spar and quartz. These ore are chiefly lead sulphates (not galena), rich in silver. Their great specific gravity indicates stamping and concentration by currents of water as their proper treatment prior to reduction. At present the better ores are laboriously separated from the poorer ones by hand, and then shipped to San Francisco for sale. The only shipment yet sold from this ore-bearing channel yielded over 300 ozs. of silver per ton, and about 55 per cent. lead; this ore was not well separated from its adhering gangue.

North from this basin the country is more covered with detritus; though the ore vein projects in a nearly continuous chain of hills and reefs, in the Red Cloud location, the ore lies against a steep hill rising to a height of 30 ft. or 40 ft. It is covered with a crust of earthy and lime silicates, ranging from a few inches to a few feet in thickness. This crust has been stripped off from a surface 8 ft. or 10 ft. high, and twice as long, exposing a massive body of ore, from which were stripped 10 or 12 tons, forming the shipment already mentioned. No attempt has yet been made to determine the thickness of this ore body; but from appearance of the croppings it cannot well be guessed at less than 10 ft., and it may reach 30 feet. The ore is of the same description as that of the Pacific and Black Rock, though more concentrated. The peculiar crust of the croppings is easily followed for several miles over the Nellie, Kenyon, Friend, and other locations; through the rugged heights of the Rover, and to the Ironsides. Here the ore channel rises higher, and in the Ironsides are found more marked indications of an east wall, as well as the spar and kidneys of ore of the other locations. Excellent assays have been obtained from this mine, and in many respects it promises to equal anything yet found in the district.

In the Los Pilares, a mile further north, an ore body is being stripped which is said to rival that of the Red Cloud. Rich samples have been brought in from claims located one and two miles still farther north, and which we had not time to visit. At each side of the main ore vein are other locations on the same channel, from which good ore is being taken, and high assays made. A late assay from the Silver Glance gave 5963 ozs. silver per ton. Ore from Iron Cap gave 838 ozs. Ore from the Engineer is said to have given over $20,000 per ton. While these assays are undoubtedly exceptional they are of much value in giving encouragement to miners and prospectors. The present ores of this district require concentrating and smelting. But several intelligent experts have expressed the opinion that they will be found to be milling ores, of $50 to $150 per ton, at no considerable depth. The noteworthy features of these new mines are the massive character of their cropping, the general occurrence of metal in them, the great length of the ore channel on which they are located, and its unusual breadth. The formation is pronounced favourable to the permanence of ore deposits at any attainable depth.

These mines lie 34 miles north of Yuma, in an air line; nearly 40 miles by trail on the California side of the Colorada river, and nearly 43 miles by road and trail on the Arizona side, *via* Castle Dome Landing. They are four or five miles east of the river, by a road now easy for short teams, and that can be made good for freight teams at trifling expense. Water is scarce at the mines. All reduction would have to be carried on at the river. Fuel is abundant and cheap. The development of these mines will be slow, as few of their locators have means for working them. But no man who carefully inspects them can resist a conviction that they promise in time to raise Yuma County into the front rank of mining communities. J. REIMER.

Montgomery-street, San Francisco, May 6.

THE SENTEIN MINE.

SIR,—For the misprints in my last I fear my caligraphy is to blame. Since I wrote a course of ore has been opened at Sentein, which yields 12 tons of silver-lead ore per lineal fathom (but only 5 ft. wide), of an average value for lead of 70 per cent. and 26 ozs. of silver: cost of extracting the same is 90 fr. I leave your readers to judge whether the gentleman who writes in Industry, and boldly offers to buy "all the mines in the Pyrenees for a few thousands," speculates on the simplicity of his compatriots, or has walked "his native hills" with his eyes shut. Does he know the Galerie de Bergnerasse (absits omen!) or that of Souquet, said to be richer in silver than Sentein (Bentaillon)? ARIEGE.

Pyrenees.

RICHMOND MINING COMPANY.

SIR,—As the meeting of this company will be held next Wednesday, I trust you will permit me to call the attention of shareholders to two subjects in next week's Journal, so that they may have an opportunity of calmly and quietly considering them before the hurry and excitement of the meeting. The first point I will allude to is that of a reserve fund, and I am of opinion that it was almost impossible to make a greater mistake than to have rejected the proposal to issue to the shareholders certificates representing 55,000*l.*—that is, one extra share for every five instead of paying that sum as a bonus dividend. This 55,000*l.* would have formed a reserve fund, which would have been of the utmost importance during the period of misfortune the company has since undergone. The proposal was, however, overruled by a party having a larger share of zeal than brains, whose noise overpowered the discretion and judgment of cooler and wiser heads. These certificates instead of the 5*l.* which each shareholder put into his pocket would have represented 30, 40, or 50 per cent. above that sum. I hope, however, that the meeting will not separate without adopting some plan to form a reserve fund of this amount, or of one as large as may be possible. The second point is one of great importance, but which, perhaps, must be left entirely in the hands of the directors. It is that of obtaining an Act of the Nevada Legislature legalising the Richmond Company in that State, which would not only give greater stability to the company, but would also vastly increase the confidence of shareholders and the public. As I have often had occasion to censure the directors, I will not withhold the praise which I think is their due for the improved management of the last year or two, not only in Nevada but in the London office. COMMON SENSE.

May 28.

RICHMOND MINING COMPANY.

SIR,—I notice in last week's Journal some remarks offered on the above company by "A Shareholder," who, if I mistake not, was good enough some time ago to answer a letter of mine which appeared in your valuable paper the week previously. "A Shareholder" at that time thought the shares in the Richmond Mine worth 10*l.*—that is, 2*l.* the value of ore in sight, and 8*l.* for what may yet come to the light. He may be right, or he may be otherwise; time will show. I should like, however, to hear what that gentleman's opinion is now. No dividend this month, and the handsome balance of 19,519*l.* 4*s.* to meet unforeseen contingencies. Should not a prudent man rather sell his shares at the present reduced price than seek to invest in a company exposed, as this is, to heavy damages and law expenses? One must not forget that the action brought by the Eureka Company against the Richmond Mine is for damages for ore taken by the latter out of disputed ground. The claim is not, I believe, denied, and as far as I am able to judge, from what I saw and heard, the only matter to be decided is how much the Richmond Mine shall be called upon to pay for taking the said ore. The Eureka Company—such is their modesty—limit the demand to $5,000,000. The sum, of course, is simply preposterous, yet if a verdict be given, as is all but certain, against Richmond, the sum to be paid to the Eureka, added to legal expenses, may be quite large enough to be anything but pleasant, and may absorb a large portion of the profits of the present year, and force the directors to say again they think it advisable not to declare a dividend for many months to come. Under the circumstances it may fairly be asked—What are the shares really worth? PRUDENCE.

IS IT RIGHT TO PAY ANY PURCHASE-MONEY FOR MINES?

MONSIEUR L'EDITEUR,—I have seen in your valuable and popular Journal some letters on the above subject, and I have the honour to address you thereon.

Your correspondent, "Actuary," looked at the question from a standpoint not capable of being sustained. The conflict rested between him and others for the non-payment and Mr. Salmon for the payment of purchase-money; but neither the one nor the other produced any substantial arguments proving or disproving the question. They have simply said No and Yes, until "Actuary" retired ignominieusement from the controversy rather than give his name to the public. The question was left by them unsettled. Mr. Hoskold then enters into the discussion, and reviews the whole case in a very comprehensive and able manner, and, in my opinion, properly proposed that this bantering of words should cease, and that Mr. Salmon, as leader on the affirmative side, should "raise his structure of value," giving his reason why; and that "Actuary" should, if possible, "knock it down." This would have been a more effectual manner to deal with this universally great and important subject, upon which good authorities are but very few.

If Mr. Salmon had done this, as was suggested to him, it is clear that Mr. Hoskold was not only willing but able also to take up a position on the side of Mr. Salmon; but that gentleman exhibited great weakness in judgment in evading the questions which were put to him It was detrimental to the proper solution of this great cause that at this time side winds were created à dessein from such sources as the letters signed E. Erwen and William Johnson. The gentleman who wrote the signature E. Erwen was unfortunate in not being sufficiently proficient in the use of la langue Anglaise so as to have prevented him from making such miserable mistakes in his quotations. It is my opinion that Mr. Erwen has never read the letter of Mr. Hoskold with that amount of disinterestedness which would entitle him to be heard with respect, and a more uncharitable person than myself would say that Mr. Erwen entered into the discussion with the intention of misunderstanding, misquoting, and assailing that gentleman, whom he could not (according to the evidence before me) approach with a view to combat on fair terms the well-grounded views advanced by him, and in this he has exhibited beaucoup de bruit, peu de besogne et tout pour rien; and up to the present moment this mythical Mr. Erwen has not had sufficient tact, courage, or customary English gentlemanliness to rectify himself in the eyes of Mr. Hoskold and before the public; but, à vue d'œil, a man capable of such conduct would do well to remain in secluded security until he is able to free himself honourably from the imputations which have been fairly laid to his charge in Mr. Hoskold's letter of the 3rd instant.

The letter to which the signature of William Johnson is attached, published in your Journal of May 3, refers to another letter written by the same author, and published in the *Mining Journal* of Nov. 30, 1878. I have looked at this letter, and find that, although Mr. Wm. Johnson says he wrote it, nevertheless it is signed "F. G. S., Ulverston." Mr. Johnson acknowledges positivement, in his letter of May 3, that he and the person signing "F. G. S." are but one person. The capital letters "F. G. S." do not make up the initials of the name of Mr. William Johnson, Mr. E. Erwen, or of Mr. Salmon, neither can they refer to the proper name of any person at all, but means a Fellow of the Geological Society.

I am enabled to examine a list of the Fellows of the Geological Society of London, and I do not find the name E. Erwen or that of William Johnson, Ulverston, there at all; but Mr. Wm. Salmon is an F.G.S, and resides at Ulverston. I have shown above that there are not two persons—one represented by "F. G. S., Ulverston," and the other Mr. William Johnson, by implication, also of Ulverston—but only one person, and further that this person can be no other than Mr. William Salmon. From the whole of the facts published it is impossible to come to any other conclusion, for in the letters of Mr. William Salmon, and those indicated under the signature of William Johnson, and *alias* "F. G. S., Ulverston," there is sufficent evidence to prove it. The conclusion I have drawn cannot be shaken unless someone will engage to prove that Mr. William Salmon, Ulverston, and Mr. William Johnson, *alias* "F. G. S., Ulverston," are really two distinct persons; but the person so engaging to prove their identity must give the name of the place of residence of each, otherwise it will be no proof at all. It will avail but little for Mr. Salmon to make an assertion without giving the proof named. There is sufficient in the letter of the 10th instant, written by Mr. Hoskold, to make me believe that he must have thought, as I now do, as to the parties concerned, all of whom can be reduced to a single individual; but Mr. Hoskold has shown beaucoup de considération towards those who proved themselves to be his wilful aggressors—more, in fact, than they had any right to expect—and it is apparent that it was the question at issue, and the scientific bearings of it, which he (as an expert and great authority upon value, as his work published on that subject shows) desired to discuss, and not irrevelant matters, such as those brought in by some of your correspondents. I am wishful for Mr. Hoskold to continue to write in your Journal, and to settle the question in dispute; and, if he will consent to this suggestion, both myself and friends will be happy to send to you our ideas and opinion on his contributions; but I would desire that there should be no more party intrigues, which avail nothing except that they create unnecessary disputes. Since these letters have appeared in your Journal the subject taken up by them has been much talked about in Paris, and it is reasonable to expect that some other gentlemen here will address you upon it. Was it polite or kind of Mr. Pagen to write of the "Yankee or foreigner" as he has done? The bond of amity existing between the French and other foreign countries and the English has not been brought about by such contracted notions as those possessed by Mr. Pagen. It is to be hoped that he is not a representative Englishman. If he is his humour indicates that he is a disappointed one. As a foreigner I could not have believed that an enlightened Englishman could have been guilty of such an indiscretion.

I am quite in accord with the view Mr. Hoskold takes when he

states that the question under discussion is one of value, and to be determined by persons qualified by experience and science. I am also clear that all mines, whether opened or not, can be valued, in order to find out whether any purchase-money ought or ought not be paid for them. I pity such persons as Mr. Erwen, who evidently is incapable of understanding how it is possible to determine practically what amount of minerals a mine is likely to contain and to yield during its life. His mining experience, that he so bombastically holds up to our view, and knowledge of geology, does not say much for his skill in practical mining engineering. What is the reason why he does not give the name of the place where he resides? That is very significant. Shall I conclude that he has no place of residence to give?

Je vous serai infiniment obligé, Monsieur l'Editeur, si vous étiez assez bon pour faire insérer dans votre estimable journal cette lettre.

Veuillez agréer, Monsieur, l'assurance de ma considération la plus distinguee. ALPHONSE LEON, Ingénieur.

Rue Delambre, Paris, Mai 27.

IS IT RIGHT TO PAY PURCHASE-MONEY FOR MINES?

SIR,—In last week's Journal Mr. Hoskold requires me to explain what excuse as a plea I have for making such flagrant misquotations in my former letter of the previous week. It appears to me that I have rather touched on Mr. Hoskold's susceptibility—that of finding fault with all your correspondents on the above subject, who either wilfully misrepresent or do not understand his remarks. Even in the *Mining Journal* there is a misquotation, or an error, that injures the sense and connection of his letter. I have again read my former letter, and have nothing to retract in any statement I put forward therein; and, notwithstanding Mr. Hoskold challenges me to fight my own battles, I have no wish or intention to make any personal remarks to injure that gentleman's feelings. I do not wish to criticise his capability as to whether he can himself answer some of the questions he proposes. For instance, take an open or an unopen mine of definite area—contents of mineral, cost of development, output, duration of mine, royalty, with all particulars, then the value to a purchaser. I contend that the value must be problematical, theoretical, and speculative—dependant on the important point as between buyer and seller—and if this point can be arrived at mathematically then no doubt Mr. Hoskold can give it; but there appears to me the old truism that even doctors disagree. Hence it resolves itself into a mere matter of opinion.

If Mr. Hoskold would not consider me too intrusive, I should much like him to state his opinion as to the value of a mine situated thus:—Area 200 acres, on course of lode nearly a mile; royalty 1-18th; workings, an engine-shaft on course of the lode for first 10 fathoms; lode 7 ft. wide, a mass of gossan; the next 5 fathoms a mixture of copper; the next 5 fathoms lode producing 1 ton of rich ore per fathom, worth 6*l.* per ton; the next 10 fathoms lode produces 4 tons per fathom, worth 7*l.* per ton; levels extended at this depth 10 fathoms east and west of similar value; next 10 fathoms to bottom of shaft 5 tons per fathom, at 7*l.* per ton. The mine being situated in killas, with granite to the north, and in a new locality. No adjoining rich mine to add to its value. What is the value of this mine to a purchaser?

How is the value to be arrived it? Must it be valued at what profit the ore can be returned at? Is there any prospective value to be attached? It appears to me that the majority of your correspondents have decided that it is right to pay purchase-money for mines, the question at issue being as to value, and how to be arrived at. I am not acquainted with Mr. Hoskold nor your correspondent Mr. Salmon, nor have I ever visited Ulverston or Madrid. It would be a pleasure to me to make their acquaintance. E. ERWEN.

May 28.

IS IT RIGHT TO SELL MINES?

SIR,—Your Mine Secretary is a man who in writing reports plays many parts from the time he has the pleasure to submit to your notice the reports by Captains So and So, until he is sorry to say that the affairs have been put into the hands of such. I am strongly reminded of this by two reports by one who is evidently an adept at this thing. One came yesterday purporting to be the half-yearly report of a lead mine which has been worked for a long time, but for the last few years has fallen into the hands of a limited company, and appears to be passing through the various stages. At present the secretary writes of it bewailing the dull times, but does not even hint at a dividend, nor give a balance-sheet. It contains the usual captain's report at the stage which it has reached. The other reports from the same secretary came this morning. It refers to a mine in the first stage, and here he shines as becometh the man who has "the pleasure," &c. He tells you that mines in the district have paid "many hundred thousand pounds profit," talks of convulsions of nature in the mines favour and "sitch;" that enemy—machinery—which so often proves fatal to young companies is not needed. All he wants is 12,500*l.*, out of which he will pay 5000*l.* to a man who holds the lease, and the thing is done. Make your deposit 10s. on application, and 40s. on allotment, and you may stand to win many hundred thousands. You may stand on the top of "a great mountain whose apex can be seen from" I don't know where, and say "If there is any lead beneath my feet it is mine," &c. Now, here is a mine sold for 5000*l.*, the vendors are not hard up, for they have taken shares in this company for almost the whole amount. The question naturally rises in one's mind—Why do they sell it? I am strongly of opinion that it would be a great benefit to mining if transactions of such things were fairly explained. Who shared the bonus? Do the directors or the captains or the secretary get any part of it, or why do they sell a mine which the seller says is of no ordinary character?

AN ENGINEER

THE HOLLWAY PROCESS.

SIR,—One cannot help noticing the importance of this novel method of separating copper from that large class of ore in which it is associated with an excess of iron pyrites. It can scarcely fail to affect copper smelters most seriously if its practical application is carried out successfully; and concerning this, so far as at present can be seen, there is little doubt. Although Mr. Hollway has made a number of experiments requiring the outlay of a considerable sum of money, the best contrivances he has yet used have been of a most inadequate and inconvenient description for working satisfactorily. In all of the last four experiments practical difficulties have arisen which could scarcely have been anticipated and provided against without previous experience, and no doubt Mr. Hollway will yet encounter a few more to teach him the necessity of some modifications in the form of his plant. He has to deal with very large quantities of material under, one might say, entirely new conditions; so Mr. Hollway has not only to play the part of an inventor so far as the furnace reactions are concerned, but he has to devise the plant for almost every stage of his operations.

The chief point which was left untouched at the last meeting at the Society of Arts was the form of the furnace. Concerning the materials for lining it there is, I think, little difficulty, and even if it is found that certain linings will not resist the action of the slag at the high temperature attained, they might be made to do so by a proper contrivance for cooling them on the outside of the furnace—such as a water jacket, or by means of a spray of water, as was suggested by one gentleman at the last meeting of the Society of Arts. But little has been made known concerning the form of the furnace to be adopted, and the method of introducing the blast. One is almost surprised that this has not been discussed, since other matters not of so much importance, so far as the application of the process practically is concerned, though most interesting both scientifically and practically, have received most minute attention.

Many interesting and unexpected results have been obtained by thus subjecting the molten sulphides to rapid oxidation. Amongst others is the formation of a slag of an almost constant chemical composition; another is the curious fact that the gold has been found to remain with the regulus when it has been over-blown enough to produce metallic copper, while the greater part of the silver is found with the metallic copper. These facts show that one can scarcely theorise upon the probable behaviour of the constituents of the ore. The conditions are peculiar and very variable, since blowing the air through a given quantity of the sulphides for a few minutes more or less will entirely alter the conditions, and more the varying quantities of any of the constituents may in some measure determine their behaviour. We have entering the matter an oxidising agent, and leaving it a sulphurising reagent, so long as any free sulphur is sublimed. So the lower part of the molten matter is subjected to an oxidation, while the upper part is subjected to a possible reduction; and on account of the great agitation produced by the blast, it is possible that any portion of the molten matter may be subjected to either one or the other alternately. Therefore, so far as I can see, all that can be asserted is that an oxidation takes place producing a certain heat, and a portion of all the oxidisable metals will be oxidised; but certain oxides, amongst them oxide of copper, will be again reduced by the sulphides unacted upon by the air of the blast, either to the metallic state or to sulphides, according to circumstances. My opinion concerning the sublimed metals is that lead, antimony, and arsenic will sublime as sulphides, and the actual votalisation of the zinc will take place in the metallic state, though it would be afterwards changed to sulphide of zinc in an atmosphere of sulphur vapour. All who take an interest in scientific metallurgy must wish for the success of a scheme began and worked at with so much vigour and enterprise as this one, and must wish Mr. Hollway good fortune in his great undertaking. ENTERPRISE.

LEADHILLS MINING, &c., COMPANY.

SIR,—A very suggestive report by the directors and consulting engineer of this company, in calling a meeting for June 6, has been received by me. No statement of accounts accompanies this, but we are left to conclude, from the tenour of their communications, that no profit has been made, and probably a loss will be shown. Now, it will not suit me, considering my distance from London and the small amount of my holding, to throw good money after bad by attending the meeting, but I would call upon my brother shareholders who are nearer, and whose interest may be more substantial than mine, to look after their interests. It seems an ugly thing to me that a company started with such a flourish of trumpets as this company was, and considered such a good thing that nothing less than 120,000*l.* was required to buy it up, should be in such a position already (even giving all allowance for the very low price of lead) as to be unable to declare any dividend. Why is this meeting called now? The accounts ought to have been made up to Dec. 31, 1878, and a meeting called some time afterwards to discuss them, but I presume they see it is hopeless to show any profit even at the end of the financial year (June 30), and they have thought it better (at this late date) to gradually disclose to the poor shareholders the state of matters.

In connection with the exorbitant sum of 120,000*l.* paid to somebody for the property, I have to draw attention to a rather ugly circumstance. About 12 or 15 months ago (I think) the manager of the Duke of Buccleuch's mines at Wanlockhead wrote a letter in your widely circulated Journal, in which he severely animadverted on the getters up of this company, and plainly stated that it was not worth more than one-sixth of what was paid for it, leaving it to be inferred that someone benefited to an enormous amount by the transaction. I was anxious to ascertain what the directors would have to say to this, but from that time to the present no letter of contradiction has appeared in the Journal.

May 29. A HOLDER OF THIRTY SHARES.

SKETCHES OF CORNWALL—HISTORICAL, BIOGRAPHICAL, AND TOPOGRAPHICAL—No. III.

SIR,—Alternun is said to be the burial place of S. Nonnet, S. Nouna, or S. Nun, daughter of an Earl of Cornwall, and mother of S. David; hence probably its name. Near the church is S. Nun's Well, the water of which was said to be famous for the cure of lunatics. Carew's quaint description of the process of cure is too good to be omitted. "In our forefathers' daies, when deuotion as much exceeded knowledge as knowledge now cometh short of deuotion, there were many bowssening places for curing of mad men, and amongst the rest one at Alternunne (it may be) by *pars pro toto*, gave name to the church; and because the manner of this bowssening is not so vnpleasant to heare as it was vneasie to feele, I will (if you please) deliuer you the practise, as I receyued it from the beholders. The water running from S. Nunne's well fell into a square and close walled plot, which might be filled at what depth they listed. Vpon this wall was the franticke person set to stand, his backe towards the poole, and from thence, with a sudden blow in the brest, tumbled headlong into the pond, where a strong fellowe, provided for the nonce, tooke him, and tossed him up and downe, alongst and athwart the water, vntil the patient, by foregoing his strength, had somewhat forgot his fury. Then was hee conueyed to the church, and certaine masses sung over him; upon which handling, if his right wits returned, S. Nunne had the thanks, but if there appeared small amendment he was bowsened againe and againe, while there remayned in him any hope of life, or of recovery."

A quarto phamphlet was published in 1640, giving an account of a thunder storm which took place at Antony, near Torpoint, on Witsuntide in that year. A noise of the most uncommon kind was heard, and immediately followed by the passage of a fiery ball through the church, which scorched 14 persons, and terrified all the congregation, consisting of about 200, but none were killed.

The beach on the south side of Torpoint was formerly used as a burial place for prisoners of war, &c.; and at the going out of the tides coffins and skeletons have frequently been exposed to public view.

About half a mile to the west of the Little Dennis is the village of Condurra, in St. Anthony, Meneage, where in a field was found a large quantity of Roman coins in a knapsack.

The following sad story is too well authenticated to be omitted. About a century ago, at a time when corn was scarce and dear, some tinners rose in a body, and proceeded to Par, where it was reported much grain was deposited in a cellar for shipment. Passing by a tinwork near St. Austell (no doubt Polgooth) they found a man named Rosevear at work, who at that time was one of the constables. To him they applied with a false message, saying that they had an order from a magistrate that in their journey to Par they should take him, as a constable, to inspect their conduct, and see that no mischief was done. Rosevear, who possessed not the most acute penetration, deluded by this vulgarly plausible tale, instantly joined the mob, and on his way to Par caught the same spirit by which the whole body was actuated. Arriving at the door of the cellar they persuaded him that, as a constable, it was his duty to break it open. This he did, and the mob proceeded according to the rules of plunder. On returning to his home Rosevear, and several others, were selected as examples of vindictive justice, to escape which he absconded, and concealed himself in the neighbourhood of Launceston, until he was nearly starved. One day, as he was near the public road, he observed two men on horseback, whom he instantly recognised as his neighbours and relations. Encouraged by their appearance, and urged by his own distress, he ventured to address them, and to make enquiries respecting affairs at home. Of this they gave him a favourable account, assuring him that the late riots were nearly forgotten, and that he might return without any danger. Deceived by their false pretences, he joined their company, but no sooner had they got him in their possession than he discovered that his confidence was misplaced. Those men were at that very time returning from Launceston Gaol, whither they had conveyed one of Rosevear's accomplices, and then had a warrant with them for his apprehension. Thus treacherously captured, he was at once committed to prison, and, at the ensuing assizes being found guilty, and condemned to die, was shortly after executed, and his cousins received the reward that had been offered, which they did not hesitate to pocket. After execution his body was brought, pursuant to his sentence, to what was then called St. Austell Downs, but since enclosed, where it was suspended on a gibbet, to blacken in the sun, and for its bones to clatter in the breeze. Many not long since living recollect to have seen the gibbet standing. The name of Rosevear is still familiar in St. Austell, and the transcriber has heard his parents speak of the severity of his sentence with a sigh of commiseration.

It is remarkable that for nearly a century and a half there have been but three rectors in the parish of Blisland, near Bodmin. At St. Austell the Rev. Stephen Hugo was vicar from 1696 to 1758—62 years.—*May* 21. S.

THE PLYMPTON MINING AND ARSENICAL COMPANY.

SIR,—The notice of this company which appeared in last week's Journal cannot but prove an incentive to many of our struggling companies, and will not, I trust, be disregarded by the managers of mines which possess deposits of mundic hitherto regarded as valueless. A schoolboy story tells us of a Roman hero who was held to deserve great reward, because in an hour of darkest seeming "he had not despaired of the Republic." All interested in the prosperity of Cornish and Devon mining ought to tender some such distinction to the representatives of the above company for their spirited exertions in establishing a new source of wealth collateral with tin mining at a moment when the latter is overburdened with difficulties. They have succeeded in making mundic ores, which have hitherto been treated as worthless, a highly profitable article, from which the company will, it is fully expected, early resume dividends. This is a splendid result, and ought to be appreciated by others than those immediately interested in the success of the company. There are a great many mines in West Cornwall which possess immense quantities of pyrites, and there can be no reason why they could not be so successfully treated, as in the case of the Plympton Company. Surely our managers of mines will not be neglectful to improve in a similar manner. It is by no means a remote period when yellow copper sulphurets were thrown away as waste in searching for tin, and yet since that the profits of our best dividend-paying mines have been from those very ores. The splendid results of the Plympton Company suggest a similar result with regard to pyrites.—*Truro, May* 27. FIERI FACIAS.

[For remainder of Original Correspondence, see to-day's Journal.]

THE SCOTCH MINING SHARE MARKET—WEEKLY REPORT AND LIST OF PRICES.

During the past week business has been restricted by the approach of the fortnightly settlement, now in progress, and owing to realisations the tendency of prices has in some cases been downwards. Particulars of the continuation business done are given below. Transactions now entered into are for the new account (June 13), and the markets are beginning to show an improving tendency. The revival in trade continues very slow, and distrust prevails in many departments; but money remains cheap, and political affairs quiet, so that some improvement is quite possible, and would cause prices to rise more than anything else.

In shares of coal and iron companies Clyde Coal have advanced 4*s.* per share, and Arniston 2*s.* 6*d.*, while Bolckow, Vaughan (A) are reduced 10*s.*, Glasgow Port Washington (prepaid) 5*s.*, Marbella 2*s.* 6*d.*, and Omoa and Cleland 1*s.* Benhar are also easier, having sold between 30*s.* and 26*s.* 9*d.* Steel Company of Canada offered. The Pelsall meeting is on June 20. The Newport Abercarn report is considered to hold out better encouragement of some return being obtained from this investment. The Darlington Iron Company has made a call of 30*s.* per share, which on the 14,000 shares of the company's capital is calculated to raise 21,000*l.* Andrew Knowles and Sons are at 12 dis.; ditto 25*l.* paid, 15 dis.; ditto 50*l.* paid, 23. Bilbao, 18½. Bolckow, Vaughan, A, 58½ to 59½; ditto, B, 34½; ditto 5 per cent. preference, 19½; ditto (stock), 105 to 107. Charles Cammell and Company, 22 dis. Chapel House, 20*s.* to 25*s.* Cardiff and Swansea, 25*s.* Chillington, 37*s.* 6*d.* to 42*s.* 6*d.* Darlington, 12½ dis. Ebbw Vale, 50*s.* to 60*s.* Marbella, 22*s.* 6*d.* to 25*s.* Midland (new), 6 dis. Muntz's Metal, 30*s.* premium. Northfield, 7½ dis. Omoa and Cleland, 6*s.* to 7*s.* Parkgate, 28¼ dis. Pelsall, 11 to 9 dis. Rotherham, Masborough, and Holmes (6 per cent. preference), 90*s.* Rhymney, 12. Sandwell, 13. Scottish Australian, 37*s.* 6*d.* to 40*s.* Staveley, A, 40*s.* dis. Thorp's Gawber Hall, 17*s.* 6*d.*

In shares of foreign copper companies, Tharsis old and new shares are each 7*s.* 6*d.* higher on favourable dividend rumours, but an adverse reaction has taken place in Rio Tinto, the 5 per cents. being reduced 1*l.*, and the shares 7*s.* 6*d.* Tharsis advanced to 23, but have not maintained the improvement. The drawing of Rio Tinto 7 per cent. bonds takes place in Paris on Saturday. The New Quebrada output for April has been 1100 tons at 13 per cent. and the new stopes yielding well. English and Australian 26*s.* 3*d.* New Tharsis, 10. Rio Tinto 5 per cent. 70¼; ditto shares, 80*s.* to 82*s.* 6*d.* Yorke Peninsula, 2*s.* 6*d.* to 3*s.* 9*d.*; ditto (pref.), 10*s.* to 15*s.*

Shares of home mines continue very neglected. The sale of copper ore by the Glasgow Caradon Company on the 23rd inst., computed 190 tons, realised 757*l.* 7*s.* 6*d.*, or an average of 79*s.* 8*d.* per ton, being a considerable improvement on last month, which was 190 tons at 68*s.* 7*d.* The sales in the month of May for some years past have been—In 1878, 240 tons at 99*s.* 9*d.*; in 1877, 240 tons at 78*s.* 4*d.*; in 1876, 240 tons at 99*s.* 9½*d.*; in 1875, 240 tons at 118*s.* 5*d.*; and in 1874, 250 tons at 93*s.* This is the company's fifth sale for the current financial year, and the proceeds of these five sales, compared with those for the corresponding period of 1878, show a decrease of 431*l.*; this is not due to a lower price for the ore, but 159 tons less have been sold this year so far. As the mine is understood to be as rich as ever, it is evident they can sell more whenever the price is suitable, when the improvement that has already set in their position would become more apparent. Carn Brea, 28. Combmartin, 4*s.* Devon Great Consols, 40*s.* Dolcoath, 26. Eyam, 70*s.* Great Holway, 80*s.* to 90*s.* Herodsfoot, 70*s.* Killifreth, 5*s.* Llanrwst, 7*s.* 6*d.* Monydd Gorddu, 36*s.* 3*d.* Morfa Du, 16*s.* to 18*s.* North Busy, 47*s.* 6*d.* North Laxey, 2*s.* 6*d.* Prince Patrick, 20*s.* to 30*s.* South Caradon, 57. Van Consols, 4*s.* West Assheton, 15*s.* to 20*s.* West Chiverton, 40*s.* West Tolgus, 27. West Goonbarrow China-Clay, 8. Wheal Jane, 2*s.* 6*d.*

Shares of gold and silver mines are generally drooping. Richmond have been neglected, from 8½ to 8⅜, and now 7¾ to 8. This week's run is $55,000. The annual report shows a wonderful produce at the Richmond, from the profits on which there has been paid in dividends 57½ per cent. Yet the fact that now they can pay nothing shows how uncertain American mines are—rich to-day and poor to-morrow. However, the report adds that the mine continues to open out most satisfactorily and promising; but it is pretty likely it will never come near its former richness. The dividend to be recommended at the annual meeting of St. John Del Rey in June will be 12½ per cent. for the half-year. Advices from Don Pedro report that the 60ft. wheel has commenced to pump water from the 40 fm. level. The gross profit at Tolima in March was 977*l.* Australasian Mines, offered. Cedar Creek are at 2*s.* 6*d.*; Colorado United, 35*s.*; Eberhardt, 70*s.*; Emma, 2*s.* 6*d.*; Exchequer, 2*s.* 6*d.* to 5*s.*; Flagstaff, 2*s.* 6*d.* to 5*s.*; Port Phillip, 8*s.* to 10*s.*; Rossa Grande, 2*s.*; Santa Barbara, 37*s.* 6*d.* to 39*s.* 6*d.*; South Aurora, 2*s.* 6*d.* to 5*s.*

In shares of oil companies Young's Paraffin have improved 2*s.* 6*d.*, and Uphall 1*s.* 3*d.* Broxburn and Oakbank are both dealt in ex div. Young's Paraffin have sold from 13⅞ to 14½. Price's Patent Candle, 8 to 9. Runcorn Soap and Alkali, 6½ dis.

Miscellaneous companies shares are unaltered. Earl's Shipbuilding, 10½; Native Guano, 5*s.*; Palmer's Shipbuilding, A, 18. In wagon companies shares no alteration, but Scottish are wanted at 9, and might realise a little more. Birmingham, 12¾; British, 12*s.* 6*d.* prem.; Gloucester, 6½; Metropolitan, 30*s.* prem.; Midland, 8; and Railway Carriage, 80*s.* In chemical companies shares there is some enquiry for Lawe's ordinary and preference, the former at 8 to 8¼. Langdale's easier at 7*s.* 3*d.*; Newcastle, 7*s.* 6*d.* to 10*s.*; and Nitro-Phosphate, 16¼.

On Contango-day (Tuesday) the following were the rates of continuation current:—Contangoes—½*d.*, 1*d.* on Benhar Coal, 1*d.* on Glasgow Caradon, 1*d.* on Huntington, 3*d.* on Richmond, and2 ½*d.* on Oakbank Oil.—Backwardations: 6*d.* on Uphall Oil; 1*s.*, 9*d.*, 10½*d.*, 1*s.* 3*d.* on Young's Paraffin, 1*s.* on Broxburn Oil. —Even: Tharsis and Broxburn Oil. On comparing the making up prices fixed to-day for the following shares with those at the previous settlement the undermentioned variations are shown to have occurred during the past account—Rio Tinto shares have advanced to 1*l.* 15*s.* each, Tharsis 1*l.*, Broxburn Oil 15*s.*, Tharsis (7*l.* paid) 12*s.* 6*d.*, Richmond 7*s.* 6*d.*, Benhar 2*s.*, and Glasgow Caradon 1*s.*; on the other hand, Glasgow Port Washington have declined 7*s.* 6*d.* per share, Uphall 6*s.* 3*d.*, Marbella 2*s.*, and Young's Paraffin 1*s.* 3*d.*; while Huntington, Monkland, Oakband Oil, and Rio Tinto 5 per cent. are all unaltered.

NEW MINING COMPANIES.—The company lately formed to acquire and work Goginan and Level Newydd Mine is being vigorously promoted. Another good property in the same district is also about to be taken up by a company, of which we have obtained the following particulars. The property is known as Severn Valley, and situated in the county of Montgomery, about seven miles west from Llanidloes, and three miles due south from the Great Dyliffe. Its position may further be defined as a centre between Dyliffe, Wye Valley, West Wye Valley, Plynlimmon, Van, Van Consols, Nantiago, and other well known mines. The sett, comprising an area of 3000 acres, is traversed for a length of 1½ mile by the lodes of Cwmricket, Nant-y ricket, and other mines, as well as the north, middle, and south lodes of this mine. The south lode has been extensively operated on from the deep adit, but little or no attention has been paid to the other two lodes, which are of a kindly nature, containing all the elements usually accompanying good bunches of ore. The south lode has been intersected by an adit cross cut, driven 40 fms. from the north side of the hill. At the point of intersection a level has been continued east on the course of the lode some 100 fms. About 45 fms. of this driving must have proved very productive for lead and copper ores, as the back above this level has been wrought out in many places.

In order not to allow such a good property to remain idle the proprietors let the upper levels and stopes on tribute a few weeks ago, and already 7 tons of silver-lead are being prepared for market, which conclusively proves this is a very valuable and safe investment. Owing to the water in the mine the tributers have only been working in the shallow levels and stopes, but if the water was removed 40 or 50 men could be started at once. The engine shaft has been sunk 3 fms. under the adit, the wheel-pit is in first class condition, and water courses already made, so that the outlay for dressing apparatus would be small. It is proposed to erect a 50 ft. water-wheel, rods, and drawing machinery for winding stuff, &c., as large quantities of lead have been worked from the south lode. The engine-reef long and great experience who have reported on the mine say that the working of the north and middle lodes together may shortly make it a mine equal to the Van. The royalty is 1-16th. Any further particulars regarding this company can be had upon application. The capital is 40,000*l.* in 1*l.* shares.

MANGANESE MINING COMPANY.—A company is being formed to acquire and work the Greystone Wood property, situated on a hill-side four miles from Launceston Station, near the River Tamar. The mine is at present worked by five shafts, but an adit has been

driven 60 fms., and is about 8 fathoms from cutting No. 1 lode. This will open 50 fathoms of backs, and reduce costs by 6s. to 10s. per ton. There are two lodes in the property, valued at 8 and 10 tons per fathom respectively. They run east and west 350 fathoms. The sett is 350 fathoms square. Manganese already raised by these shafts has averaged 74 per cent., and sold at 3l. 12s. 6d. per ton, at which price further supplies were enquired for. A good deal is now at the dressing floors. The cost of raising the manganese by the shafts, reckoning 12 men and 50 tons per week, is not over 38s. 6d. per ton, which would be reduced on completion of the adit level by 6s. to 10s. per ton, as previously stated. The reports that have been obtained from mining authorities on this property are too long and exhaustive to be described here more fully than that they all agree that it is very promising, and a first-rate thing. They say it is second but to one (the Challaton) in the two counties. The company acquires this very valuable property in full work for 4000l., which is a very moderate valuation to include all plant, machinery, &c. The rent is 40l. per annum, merging in dues. The lease has 17 years to run. The property can be inspected by or for intending shareholders, and samples of the ore, with any further information, may be obtained upon application. The capital is 6000l., in 1l. shares.

Capital. Per share.	Paid up.	Dividends. Rate per cent. per annum. Previous.	Last.	Description of shares. COAL, IRON, STEEL.	Last price.
£ 10	£8	£ 7†	£ 5	Arniston Coal (Limited)	5⅜
10	10	4	4	Benhar Coal (Limited)	27s.
100	55	3 1s 6d‖	25s‖	Bolckow, Vaughan, and Co. (Lim.) A.	5⅜
10	10	10	10	Cairntable Gas Coal (Limited)	5¼
10	10	4s‖ April, 1876		Chillington Iron (Limited)	40s.
10	10	—	—	Clyde Coal (Limited)	30s.
23	20	10s‖ Dec., 1874		Ebbw Vale Steel, Iron, and Coal (Lim.)	55s.
10	7	nil	nil	Fife Coal (Limited)	75s.
10	10	nil	nil	Glasgow Port Washington Iron & Coal (L)	42s. 6d.
10	10	—	—	Ditto Prepaid	42s. 6d.
10	10	—	—	Lochore and Capledrae (Limited)	10s.
10	10	nil	nil	Marbella Iron Ore (Limited)	22s. 6d.
10	10	nil	nil	Monkland Iron and Coal (Limited)	27s. 6d.
10	10	5	4	Ditto Guaranteed Preference	47s 6d.
100	100	nil	nil	Nant-y-Glo & Blaina Ironworks pref. (L)	16
6	6	nil	nil	Omoa & Cleland Iron & Coal (L. & Red.)	6s.
1	1	15	15	Scottish Australian Mining (Lim)	40s.
1	10s.	15	15	Ditto New	20s.
Stock	100	nil	nil	Shotts Iron	60
				COPPER, SULPHUR, TIN.	
4	4	—	—	Canadian Copper and Sulphur (Lim.)	6s.
10	7	72s 6d‖	35s‖*	Cape Copper (Limited)	27½
1	1	7½	2½	Glasgow Caradon Copper Mining (Lim.)	20s.
1	15s.	7½	2½	Ditto New	13s. 6d.
10	9¾	nil	nil	Huntington Copper and Sulphur (L.)	16s.
4	4	—	—	Panuelillo Copper (Limited)	25s.
10	10	6†	6†	Rio Tinto (Limited)	82s. 6d.
20	20	7	7	Ditto, 7 per cent. Mortgage Bonds	16¾
100	100	5	5	Do. 5 p.ct. Mor. Deb. (Sp. Con. Bds.)	72
10	10	20	17½	Tharsis Copper and Sulphur (Lim.)	22¼
10	7	20	17½	Ditto New	15¼
1	1	—	—	Yorke Peninsula Mining (Limited)	3s. 9d.
1	1	—	—	Ditto, 15 per cent. Guaranteed Pref.	12s. 6d
				GOLD, SILVER.	
1	1	—	—	Australasian Mines Investment (Lim.)	5s.
5	5	10s.‖	10s.‖	Richmond Mining (Limited)	8⅜
				OIL.	
10	8½	—	—	Broxburn Oil (Limited)	14
10	7	5	5	Dalmeny Oil (Limited)	7
1	1	25	15	Oakbank Oil (Limited)	41s.
1	5s.	—	15	Ditto	10s. 6d.
10	10	7½	2	Uphall Mineral Oil (Limited) "A"	6⅜
10	10	—	—	Ditto "B" Deferred	10
10	8½	17½	17½	Young's Paraffin Light & Mineral Oil (L)	14
				MISCELLANEOUS.	
50	25	5	6	London & Glasgow Engineering & Iron Shipbuilding (Limited)	20
7	7	10	5	Phospho Guano (Limited)	6
10	10	6	5	Scottish Wagon (Limited)	9
10	4	6	5	Ditto New	60s.

† Interim. ‡ Per share. * For six months of 1878.

NOTE.—The above lists of mines and auxiliary associations are as full as can be ascertained. Scotch companies only being inserted, or those in which Scotch investors are interested. In the event of any being omitted, and parties desiring a quotation for them, and such information as can be ascertained from time to time to be inserted in these lists, they will be good enough to communicate the name of the company, with any other particulars as full as possible.

J. GRANT MACLEAN, Stock and Share Broker.

Post Office Buildings, Stirling, May 29.

HOT MINES.—Probably the hottest mines in the world are those situated on the Comstock lode in Nevada. The highest mine temperature reported to the British Coal Committee was 106° Fahrenheit, but some of the Cornish mines have shown an air temperature rising to 113° Fahrenheit. The hottest water reported in a Welsh mine was at 125° Fahrenheit (J. A. Phillips). In the Comstock mines, according to Prof. Church, who has lately described the conditions, the air is never hotter than the rock, as it is in Cornish mines, and the rock in the lower levels (1900 ft. to 2000 ft.) appears to have a pretty uniform temperature of 130° Fahrenheit. The readings were obtained by placing a thermometer in ordinary drill-holes, 10 in. to 3 ft. in depth, immediately these were finished, and keeping them there ten minutes to half an hour. The mining in the Comstock proceeds with remarkable rapidity, the drifts being advanced 3 ft., 5 ft., and sometimes even 8 ft. or 10 ft. a day, so that there could not be any sensible diminution of heat at the bottom of a drill-hole. The temperature of the air is subject to more fluctuations than that of the rock, for the simple reason that it is artificially supplied to the mine. In freshly-opened ground it varied from 108° to 116° Fahrenheit; but higher temperatures are reported at various points (reaching 123° Fahrenheit in one case). The water reaches much higher temperatures, 150° Fahrenheit and upwards. One small stream that had flowed 150 ft. over the bottom of a closed drift with little evaporation gave 157° Fahrenheit. Belts of excessively hot ground are often met with in these mines, and also, though fewer in number, belts of unusually cold rock.

BRITISH COLUMBIA COAL TRADE.—The coal mines of Vancouver Island have, during the year 1878, passed through a period of unprecedented discouragement, the prices at San Francisco, the chief foreign market for these coals, having reached the lowest rate yet attained. Indeed while subjected to so much depression only the most able commercial management, and the utmost economy in carrying on the works, have saved this important industry from entire cessation. The coal mines which have been in active operation during the past year—the Vancouver Coal Company's Douglas, Chase River, and Fitzwilliam mines, and the Wellington Company's mine—have shown satisfactory progress, having produced upwards of 171,000 tons of coal during the year 1878, against 154,600 tons, the total output of four proprietories carrying on work in 1877, being an increase of 17,000 tons for 1878, and the greater excess of 32,000 tons over the total output of 1876. In view of the extremely low rates obtained for coal in San Francisco during the past year, it is gratifying to find that the shipments of coal to that port have not diminished, but largely increased, thus manifesting a praiseworthy determination on the part of the managers of these mines not to be beaten out of their accustomed channels of trade. During the year 1878 over 164,000 tons of coal, the produce of Vancouver Island, have been shipped to San Francisco and southern ports of California, Portland, Oregon, Seattle, Washington Territory (gas coal) Ounalaska, Alaska, Mexican Ports, Hawaiian Islands and Hong Kong, vessels belonging to various navies, and to the steamships of the several mail services. The foreign shipments of coal for 1878 show the remarkable increase of nearly 50,000 tons over the foreign shipment of 1877. Undoubtedly the unfortunate stoppage of work at the Wellington Colliery lessened the total output and shipments for the year 1877; but, on the other hand, the idleness of both the Vancouver Coal Company's mines and the Wellington Company's mine during portions of several months of the dullest times of 1878, equal to the actual working time of the mines in the year under comparison, and so justify the deduction that the coal industry of this province is in a promising state of development and progress. The sales of coal for home consumption are small in proportion to the quantities exported. These sales for 1878 were 1655 tons more than those of 1877. Several bore-holes have been put down by the various companies, notably one by the Vancouver Coal Company to a depth of 746 ft. by their Diamond drill; one by Dunsmuir, Diggle and Co., to a depth of 500 ft.; one by the Baynes Sound Coal Company to a depth of 375 ft.; and one on the Westwood Estate to a depth of 220 ft. The following is a statement showing the amount of coal raised and the number of fatal and non-fatal accidents that have occurred during the last three years: 1876—131,191 tons raised; 4 fatal and 9 non-fatal accidents; 34,797 tons raised per life lost. 1877—154,052 tons raised; 5 fatal and 14 non-fatal accidents; 30,810 tons raised per life lost. 1878—180,496 tons raised; 3 fatal and 7 non-fatal accidents; 56,832 tons raised per life lost. From the above figures you will perceive that in the past year there has been about 84 per cent. more coal brought to the surface for each life lost than there was during the preceding year. This, I think, you may consider is a very satisfactory result for the year 1878.

— Mine Inspector's Report.

Meetings of Public Companies.

EBERHARDT AND AURORA MINING COMPANY.

The yearly meeting of shareholders was held at the Cannon-street Hotel, on Tuesday,

Mr. E. L. J. RIDSDALE (the Chairman) presiding.

The notice calling the meeting was read by Mr. ALF. CRITCHETT, the secretary.

The CHAIRMAN moved the adoption of the report and accounts for the year ended Dec. 31 last. He said that before putting a resolution to the meeting he would just give a sketch of the work which had been done, and also of the financial position of the company, in order to show how they had proceeded up to the present time, and also what were the prospects for the future. On turning to the accounts they would see that there had been received from the mine about 16,500l. of bar silver, but notwithstanding that there had been a considerable loss upon the year's working, because the directors had devoted their attention entirely to running the tunnel and the drift out of it. The drift which had been run out of the tunnel had been made in the present year, but that was a subject to which he would refer later on. Some short time ago the directors telegraphed to Capt. Drake requesting him to send for the information of the present meeting the exact financial position of the company, because the bulk of the money which had been subscribed in the shape of debentures had been expended in running the drift under the Eberhardt Mine; and although they had not yet succeeded in striking the ore which they had been looking for, Capt. Drake wished to go on with it for another week at least, running in the direction of the old working of the Eberhardt, because the ground was exceedingly broken, and there had not yet been time to strike what they had been looking for. They had been very much disappointed in the broken character of the ground. The drift which they had run to get under the Eberhardt had proceeded 942 ft., and they expected to strike the lode of the Eberhardt 1000 ft. deep. But the shareholders would remember that a telegram came to say that the ground was very much broken, and since then there had been a band of hard limestone, and there was every reason to suppose that the wall had altered its course, and he believed that was the reason they had not got to the lode before. The telegram just received by Capt. Drake was as follows:—"June 1st; liabilities, $3700." He might mention that the directors wished Capt. Drake to give the complete position of the liabilities out there, and also the cash in hand, so that the board here could know, by comparing it with the cash here, the exact financial position of the company, in order that the shareholders might have the exact financial position of the company before them before they were asked to subscribe to the remaining debentures. Telegram proceeded:—"No cash; consumable supplies, tunnel, $6000; mine, $2000; mill $11,000," which gave a total of $19,000, against liabilities of $3700. "Total length of drift, 942 ft., ground broken, strata irregular; would advise resuming work in main tunnel June 1st, unless material change in drift. Can contract for driving tunnel at same cost as drift. Please cable decision of company." Well, the position of the company was exactly this. They had run 3880 ft. in the tunnel, and driven 942 ft. in the drift. They were obliged to run that under the Eberhardt ground in the direction of the drift, because, when the directors last met the shareholders, the South Aurora Company had not arranged, nor were they in a financial position to arrange, for the balance of 400l., which the South Aurora had agreed to pay to this company when the tunnel was run through the South Aurora property, and the board considered that as they had 1000 ft. more to run before they came to the South Aurora property it would be a useless expenditure of money to run to their ground, and then come to a standstill or work through their property for nothing. But the South Aurora had found what was a perfectly reliable banker's guarantee for the 400l. which they contracted to pay to this company, and if they had known this they might not have run a drift under the Eberhardt, but have gone on with the original tunnel. But as it was the board proposed to go on with the drift, and see if they could not strike the ore, and if not they hoped to take up the tunnel at the point at which they left it—at end of 3880 ft.—and run the 1000 ft. more up to the South Aurora ground. When the directors met the shareholders at the last meeting they asked them to subscribe for 20,000l. of debentures. The response which was received was a very favourable one considering the rather tight position of the money market, as no less an amount than 11,500l. was subscribed. He dare say the shareholders would like to know how that money had gone. They had been at work about six months since then, and had run 942 ft. in the drift, and that distance had been run at a cost of about 6l. per ft., which came to 5652l. in round numbers. If they turned to the balance-sheet they would find the general expenses in Nevada were 5754l. for the whole of the year, and the general expenses, such as rent, telegrams, salaries in London, and so forth, amounted together to about 900l., which would give about 6700l. for the year, and the half of that would be 3350l. for the half year. Then there was the interest on debentures—500l. They had a cash balance of about 2300l., which accounted for the 11,550l. which was subscribed on account of the 20,000l. of debentures asked for. He put that before them because naturally they would wish to know how the money had gone, and he also wanted to show that it had been devoted to the purpose for which it had been subscribed—for running the tunnel under the drift under the Eberhardt. The directors had some money to go on with the drift, and he hoped they would still be successful, although hitherto, owing to the broken nature of the ground, they had not met the ore as the directors anticipated they would. He hoped he had made the financial position of the company tolerably clear to the shareholders. Over there they had liquid assets of about 3000l., and here they had about 2300l., making together about 5500l. But there still remained in round figures 8000l. of debentures, which the directors wished to see issued in order to complete the 20,000l. which the shareholders authorised the board to raise at the last meeting, and the directors had offered that balance to the shareholders at the price of 80, because, of course, this was coming before the shareholders a second time. The directors hoped not to have had the necessity of doing so, but they had come before the shareholders a second time to ask them to take up the balance; and, therefore, they were offered at a reduction, and he hoped they would agree with him that the price of 80, or a deduction of 20 per cent. on the par value, was a very good one considering the security offered by the mine and the property. They had there a property on which nearly 300,000l. had been expended; they had a mill which had cost about 50,000l.; they had the White Pine Waterworks, which although this company bought them at a greatly depreciated figure—30,000l.—cost originally 100,000l. Then there were the tunnels, which he could not help looking at in the light of an asset, for if the property were sold to an American company it would be a great advantage for such a company to commence where this one left off. There were other assets in the shape of steel rails in the tunnel and in the drift about 4800 ft. in length, and there was also the rock-boring machinery, which represented 3000l. or 4000l.; therefore, he thought the directors need not fear asking the shareholders to take up the debentures in proportion to their holding of shares, nor was he asking them to do anything out of the way, nor anything which he did not think would return a handsome interest for the money subscribed. (Hear, hear.) He should be happy to take any discussion on the balance sheet at that stage of the proceedings; but, perhaps, the discussion on the debentures had better come when the report and accounts were disposed of.

The resolution for the adoption of the report and accounts was then put and carried without any discussion.

The CHAIRMAN said he would now proceed to say a few words on the prospects of the mine. He dared say most of the shareholders knew as much about the mine as he did—that was to say, they knew it was a speculation for the purpose of getting either very great results or for losing their money. All mines came more or less under that category. The great object of the directors had been to devote the funds at their disposal in endeavouring to search for the wealth which had been so abundantly found on the surface of the hill. As the shareholders all knew, especially those who had joined the company at the commencement, the tunnel was driven as a speculation in order to strike the vein of ore in depth. No one could see into the interior of the hill, and all they could do was to drive into the interior in the direction which the best mining experience could advise, in order to strike the ore. Well, in that they had been disappointed hitherto. They had struck ore in the John Wild, but that was at about 1000 ft. from the entrance to the tunnel, and not where they expected to find it. He must say that he was to some extent disappointed that they had not come across ore before, but it would not do in a great concern like this to lose heart as long as there was anything like a reasonable chance of success. (Hear, hear.) Many of the best and most successful mining speculations had turned out successes when there was hardly a farthing left. They had driven only 3350 ft. into the hill, and when they had driven another 1000 ft. they would come into the ground of the South Aurora Company, which was 800 ft in width. The directors had great difficulty in getting the South Aurora Company to subscribe the money necessary for that driving, and there was no doubt the South Aurora had made an excellent bargain. Some months since this company was prepared to drive on to the ore ground if the South Aurora had been in a financial position to find the money or to give a banker's guarantee, but that they were not able to do, and therefore this company diverged into the drift towards the Eberhardt, thinking they would be able to strike the ore, but up to the present time they had been disappointed in that, as the ground there was greatly broken and the strata disorganised, they had not got the footwall at about 400 ft, and the only supposition which could be raised was that the footwall had been thrown back, but they might get a telegram from the manager at any time announcing that it had been struck. Therefore he proposed to run for another three weeks, by which time they would have driven 1200 ft. in the drift, and quite under the Keystone shaft of the Eberhardt, and he hoped next week they would strike ore there. But, even if they did not, he was not disposed to lose faith in the original undertaking. To drive 1000 ft. more would cost about 6000l., and towards that they had liquid assets of about 50 0l. But it was never good to leave the company completely bare, and that was the reason why the directors asked the shareholders to come forward and take up their proportion, or more than their proportion, of the 8500l. remaining debentures, which would be offered at 80, carrying interest at 10 per cent., with about a year and a half to run before being paid off. He had not altered his opinion about striking ore in the drift, but, after all, that was only an opinion. No one could tell whether they would find the ore, but every reasonable man could put the case to himself. The hill was honeycombed with mines where silver had been found, and it had been produced in paying quantities. The supposition was that the silver must persist in depth, and, therefore, in driving into the hill at some depth they would intersect some of the lodes which were so attractive on the top of the hill.

Mr. ASTON asked whether they had passed under any of them?—The CHAIRMAN said they had passed under the El Dorado, under the Colfax, about 600 ft. in vertical depth, and they had also passed the corner of the Thomas Jefferson.

Mr. C. I. ASTON asked whether they were going to abandon the drift?—The CHAIRMAN said they were not; the prospects were as good in the drift as in the tunnel. As he had said, they had 4000l. guarantee for the South Aurora, and this company having made that contract, were bound to run through the South Aurora ground. If the 8500l. were taken at 80, there was no reason why they should abandon the drift under the Eberhardt for some little time, at any rate till Capt. Drake told them there was no chance of their getting anything.

Mr. C. I. ASTON expressed an opinion that the drift should be proceeded with.

The CHAIRMAN said the directors were most anxious to proceed with it, and it was simply a matter of money. The directors did not want to run the company into debt.

Sir JOHN SWINBURNE: If you get the remaining debentures taken up, do you intend to continue the drift and the tunnel?—The CHAIRMAN: Capt. Drake will push the drift as far as he thinks there is a chance of coming across the main tunnel.

The CHAIRMAN, in reply to Mr. ASTON, said the directors were, of course, obliged to be guided by the advice of Capt. Drake with regard to driving the drift and the tunnel. The directors impressed upon Captain Drake that he must not run the company into debt. The directors here had worked for two or three years without fees, and the expenses were kept down to an almost ridiculously small amount. He might mention that the tailings were being worked by Capt. Drake's brother, who expected to make about $600 per month out of them, and he hoped he would be able to do so. In the last 1000 ft. in the tunnel Capt. Drake was never without ore, although it was only in small quantities, and not in any bulk.

Mr. PEERLESS said they could scarcely expect to strike the lode till they had run the driving further.

Mr. APPLEGARTH said he thought it probable that the Keystone wall had turned and gone down perpendicularly, or turned upon its back, and he believed Capt. Drake was in close proximity to the lode there, and might strike it at almost any moment. It would be folly to abandon the working there at present. They must go on with that working.

The CHAIRMAN said it was all very fine to say they must go, and he was in favour of it himself, but in order to do that effectually he wanted to see the 8500l. of debentures taken up, for if they wanted to do the work they must pay for it. It was true they had 2300l. on this side, but in a great concern like this they could not go on from hand to mouth. It was no use for gentlemen to attend the meeting to advise the shareholders to go on with the work unless they took their quota of the debentures to enable it to be done. The directors were quite prepared to take up their proportion, and he trusted that the shareholders would do the same, and thus enable the work to be pushed vigorously forward. The security was ample, and there was no doubt that if the necessity arose Captain Drake could dispose of the property for considerably more than would pay off the debentures.

A SHAREHOLDER asked whether there was sufficient money to drive to the South Aurora?—The CHAIRMAN said there was not at present.

The SHAREHOLDER: Then if you do not get the debentures subscribed you cannot go there, and that will do us out of the 4000l.—The CHAIRMAN said that was so.

Mr. APPLEGARTH, referring to the security offered for the debentures, corroborated the view of the Chairman, and said there would be no difficulty in disposing of the property at San Francisco for double the amount of the debentures.

Mr. J. WILD said that if the present shareholders did not keep the mine going others would. He believed it would be a mine for 100 years. He referred to the good opinion which the people in the district had of the property, as evidenced by the fact that the company had never had any difficulty in obtaining credit. He expressed a strong hope that the shareholders would come forward and subscribe the money, adding his belief that if they did so, and enabled the workings to be pushed on, they would reap their reward.

The CHAIRMAN reminded the shareholders that this company had taken out of the mine and sold 652,000l. worth of bar silver, and that was why he was so anxious that they should not give up the concern.

Mr. WILD drew attention to the favourable feature that when the tunnel was completed some of the poorer ores would be able to be taken out of it and treated at a profit, whereas they could not now be treated because of the expense of hauling them and getting them to the works.

The CHAIRMAN, in answer to Mr. ASTON, said the debentures could be turned into shares at the option of the holders.

Mr. APPLEGARTH said at the present issue price they would pay 29½ per cent.

Mr. BAXTER said he had taken more than his proportion of the last debentures, and should be ready to take his proportion of the remainder.

Mr. C. I. ASTON suggested that the debentures should be put up to tender.

The CHAIRMAN said it was a suggestion which was worthy of attention if the debentures were not all taken up by the shareholders.

A desultory discussion ensued, in the course of which several shareholders expressed their intention of taking up their proportion of the remaining debentures.

On the motion of the CHAIRMAN, seconded by Mr. J. H. TAYLOR, the retiring directors—Mr. H. A. Hammond and Mr. E. Applegarth—were re-elected.

Mr. APPLEGARTH acknowledged his re-election, and said he should take his proportion of the debentures.

On the motion of Mr. J. H. TAYLOR, seconded by Mr. J. GODDARD, the auditors—Messrs. Hall and Slater—were re elected.

A vote of thanks to the Chairman and board closed the proceedings.

DON PEDRO NORTH DEL REY GOLD MINING COMPANY.

The seventeenth ordinary general meeting of shareholders was held at the Cannon-street Hotel on Thursday,

General D. DOWNING in the chair.

Mr. J. E. DAWSON (the managing director) read the notice calling the meeting.

The CHAIRMAN said that before proceeding with the business of the meeting he would ask the managing director to read the latest information received from the mine.

Mr. DAWSON read the information, as follows:—

Extract from Capt. Vivian's letter, April 24: 60-ft. Iron Wheel and New Iron-work: Due note is taken of your remarks as to these subjects, and on which you have been already advised. I can but confirm my former statements—that I feel confident the repairs when fully completed to the 60-ft. wheel will be a success, not only as regards the new ironwork, but thereby enable us to work the bottom of the mine without interruption. I will not dwell long on this subject, as you seem to doubt what has already been stated, therefore I must let the future success of the wheel and the bottom of the mine speak for themselves, and both will, I hope, be shortly proved to your entire satisfaction. I must add, however, that had there been proper machinery, so as to have enabled us to develope the mine in depth, the shareholders, as well as yourself, would not have any reason to complain. As regards this matter, it is no fault of anyone here, and much less that of the mine.

Telegram, dated Rio, May 22, received May 26: The 60-ft. wheel has commenced to pump water from the 40. All's well.

A SHAREHOLDER asked how high the water rose in the mine during the time that the pump was idle?

Mr. DAWSON said just below the 20 fm. cross-cut. The wheel was now supposed to be in perfect condition.

The CHAIRMAN said the report was so full and detailed that he need not add anything to it. He referred to the great regret with which the directors had heard of the death of Mr. S. Lloyd Foster, the late Chairman of the company, and said the services which that gentlemen had rendered had been of the greatest value to the company. He moved the adoption of the report and accounts, and said the directors would be happy to answer any questions which might be put.

Mr. G. E. N. RYAN, in seconding the adoption of the report, said he thought the shareholders would agree with him that the report was not a satisfactory document, so far as it related exclusively to the operations of the company during the past year; but so far as it touched upon the present position and future prospects of the company he thought they had every ground to hope for success. In the report of 1878 the captain congratulated the shareholders upon the brilliant prospects before them; now, he would rather caution the shareholders upon that point, as it might lead the shareholders to expect more than they were warranted in expecting. His own opinion was that they had, he would not say a brilliant but a fair prospect in the mine. The machinery had been rendered effective by the pieces which had been sent out, and there was now a fair prospect of the mine being drained; if they could have any faith in Capt. Vivian, who came with good testimonials, the lode was a profitable one as deep as he had tested. He pointed out every allowance should be made in this country for directors who were managing the property so far away. They must place reliance upon agents. During the past year they had lost 10,600l., or rather more than one-tenth of the capital, but, as far as the directors had been able to ascertain, that loss had been inevitable. The question was simply whether they would go on and work the mine in depth, or abandon the mine altogether. As far as he had been able to judge, the directors had been perfectly justified in calling up the capital, and the present price of the shares in the market was a perfect justification of the course they had taken. As to the machinery, that was an old and vexed question. That machinery was ordered many years ago, when the company was at the summit of its success, and paying 100 per cent. dividend, and when the directors and shareholders thought it was necessary to go on draining the mine, and increasing or maintaining the dividend. The results had proved that the machinery was not wisely ordered. It was easy to be wise after the event. Possibly if the machinery had to be ordered over again the directors might have acted differently. His own belief was that the mine would prove remunerative, as there were the elements of success in it.

Mr. DAWSON said that it might be interesting to shareholders to know the financial position of the company at the present moment. The balance in London, assuming the calls outstanding to be paid, was 3919l.; in Rio there was a balance of 5705l., and the directors estimated that even if there were no returns of gold the balance in Rio was sufficient to carry on the mine till the end of July.

Mr. HILL said he had heard the wheel had been erected under the supervision of a representative of Messrs. Harvey, of Hayle, or some gentleman whom they recommended.

Mr. DAWSON said that was so. There was a vacancy occasioned by the resignation of one of the company's men in Brazil, and Capt. Vivian wrote home and requested that a Capt. George might be sent out. The board communicated with Capt. George, and found his terms extravagant, and they also knew nothing about him except that he was recommended by Captain Vivian. The directors, therefore, placed themselves in communication with Messrs. Harvey, of Hayle, who wrote back to the effect that they knew a man named James Hambley, who had been in America before, and was a good mechanic. No doubt Captain Vivian was a good miner, but it was too much for him to do to look after the mining and also undertake the responsibility of seeing that the machinery was in good order. There was no occasion to add to the mining knowledge on the mine, but it was most desirable to have a good mechanic to keep the machinery in order; therefore, they gladly availed themselves of the opportunity of sending out Mr. Hambley, whom they believed, from enquiries they had made, to be a thoroughly efficient mechanic, he having been in the employ of Messrs. Harvey 23 years, and had been employed by that firm to superintend the erection of important machinery which at different times they had sent out to foreign countries. Therefore the directors looked forward confidently to the machinery being kept in thoroughly efficient order in future. The shareholders had seen the confident opinion expressed by Capt. Vivian as to the prospects of the mine. Capt. Vivian stated that

in the 40 cross-cut they had a lode 14 fms. broad, and now that the repairs to the 60-ft. wheel had been completed he would be able to get at the lode. There was the further fact that they had sunk the lode 10 fms. on the dip, and driven the cross-cut, and had met with very rich samples of ore. No doubt there had been a little too much of a sanguine nature in the reports from the mine; the directors, therefore, pointed out that—

"Although the fact of finding very rich samples where the lode has been intersected does not establish the existence of an extensive rich lode in depth, it may, nevertheless, be looked upon as an indication of a very favourable character, and one which warrants the most strenuous measures being adopted for thoroughly testing the lode in this level by driving cross-cuts and treating the mineral met with, but this, of course, cannot be done until the wheel has been repaired."

The directors had received a telegram to say that the 60-ft. wheel had commenced to pump water, and probably in a fortnight the mine would be put in fork; after that the men would go to work, and then everything depended upon the condition of the stopes. If the water, which had been in a considerable time, had done much damage to the stopes the timber would have to be renewed; but Capt. Vivian had taken the precaution before the water came in to spur the shaft, and also to put in timber in the levels and stopes, so there was the prospect of the ground being speedily opened.

Mr. HILL said he was in frequent attendance at the office, and could bear testimony to the care and intelligence with which the correspondence had been conducted. There had been no blind confidence given to Capt. Vivian, but attempts had been made to verify all his statements from time to time. It was a great satisfaction to him that a competent mechanic had been sent out to keep the machinery in efficient order, because no mere miner, however competent, could scarcely do justice to that important department. All the shareholders could do was to wait with patience and hope the future of the mine.

Mr. DAWSON, in answer to a shareholder, said the amount of calls unpaid was 2100*l.* out of a total of 10,000*l.* The call was only due on the 20th of this month.

Mr. CHIPPERFIELD asked how long Mr. Dawson had been managing director?

Mr. DAWSON said his title was changed in 1869 from secretary to that of managing director. It was done by special resolution of the shareholders, but no increase was made in his remuneration.

Mr. RYAN said, in answer to further questions, the remuneration of the directors was the small amount of 60*l.* each.

Mr. MICHELL said that hitherto they had been pottering about at the shallow depths, where they had good general work, and now they had got good general work at the bottom of the mine. The present machinery had been put up because the old machinery was not adequate to keep down the water at a greater depth. If this had been done four or five years ago the present call would not have been needed, and the mine would, in his opinion, have gone on and paid profits up to the present time. He himself had great faith in the mine, and had purchased 1200 shares since they found ore in the cross cut. He had also great faith in Capt. Vivian, whose brother had been with him (the speaker) three years in Spain, and if he was like his brother they could not have a better man.

Mr. DAWSON said the reason the machinery was not put up before was that opinions were expressed by competent persons in Brazil that the 30-feet water-wheel was able to take the mine down 20 fms. deeper. But Capt. Vivian was not of this opinion, and that he was correct was proved by the fact that just before the permanent machinery was put up the 30-ft. water-wheel broke down.

Mr. ATRILL expressed his disappointment that no returns had been made from the mine, but that instead a call had been made on the shareholders. He asked what course the directors intended to pursue in the event of no returns coming in before the end of July, the date at which the money in Rio would be exhausted?

In reply to a remark, the SOLICITOR, speaking as a shareholder, pointed out that between the years 1867 and 1872 no less than 170,000*l.* had been returned to the shareholders from the lode which they were now on. They knew the value of the lode, and they knew that it had been drowned out, and the question really was whether they should spend 2s. or 3s. per share in order to get the water out, or whether they should sit down and make no efforts to reach the lode. He thought the best course the shareholders could adopt was to cordially support the directors in their efforts to reach and work that lode.

Mr. DAWSON, in reply to Mr. Atrell, said that if no returns came in, and the money at Rio was exhausted at the end of July, the directors would at once call the shareholders together, and take their opinion as to the best course to be pursued. Mr. Dawson then read correspondence which had passed between the directors and Capt. Vivian, in which the directors impressed in the strongest terms upon Capt. Vivian the necessity of making returns as soon as possible.

A SHAREHOLDER said the correspondence showed that the board had done all they possibly could to bring the mine to a success. (Hear, hear.)

Colonel WELLER (a director) expressed his strong confidence that the mine would prove a success.

After some further discussions of a desultory character the resolution for the adoption of the report and accounts was then put and carried.

On the motion of the CHAIRMAN, seconded by Mr. JOHNSTON, Mr. Ryan was re-elected a director.

On the motion of Mr. HILL, seconded by Mr. JOHNSTON, Messrs. Quilter, Ball, and Co. were re-elected auditors.

A vote of thanks to the Chairman and directors closed the proceedings.

DEVON GREAT CONSOLS COMPANY.

The ordinary general half-yearly meeting of shareholders was held at the offices, Gresham House, on Thursday,

Mr. PETER WATSON (Chairman) presiding.

The notice calling the meeting was read by Mr. W. H. ALLEN, secretary *pro tem.*

The CHAIRMAN, in moving the adoption of the report and accouts, said he would endeavour to condense his remarks as much as possible, but as this was a very important meeting he must ask the shareholders to bear with him while he laid before them not only a few facts with regard to the past but also with reference to the present position of the company and its future prospects. In 1877 they sold 5167 tons of copper ore for 18,574*l.*; and in the corresponding half of 1878 they sold 5478 tons for 13,294*l.*, and last year they sold 4952 tons for 9748*l.*, being just half what was realised in the corresponding half of 1877, and being 10s. per ton less than was realised for the corresponding six months of 1878. The price of the company's copper ore had sunk from 6*l.* 15s. per ton in 1847 to 1*l.* 19s. 5d. in the last six months, and the lowest price obtained per ton was on Jan. 23 last—1*l.* 15s. 1d. During the last 12 months there had been a reduction of 10*l.* per ton in the price of copper, and he saw to-day that Chili bars were quoted at 55*l.* per ton, which was the lowest price within the memory of man, and he might say the lowest price for the last century. This was what this company, selling as it did such a large quantity of copper ore, had to contend against. Twelve months ago the meeting discussed the desirability of reducing the output. At that time a great many mines were gradually reducing the output, or shutting up altogether. He had it on good authority that many of the deepest mines in Australia had ceased raising any ore—that was to say, they had suspended in the hope that the heavy stocks which were accumulated in this country and all over the world would ultimately be reduced, and in all probability copper would go up again. On this subject of reducing the output the directors had had communications with some of the leading authorities in the matter, and the board felt that it would be desirable to lessen the number of hands very considerably, to keep the machinery in good repair, and only to drive some of the best points in the mine, and lay it open in that way, and instead of selling these low qualities of ore at 2*8s.* and 30*s.* per ton, to keep it back, in the hope that some of those large stocks which were now coming on the market would be got rid of, and that a better price would then rule for copper ore. Passing on to the arsenic question, the directors in their last half-yearly report stated that the contract for arsenic had not been carried out owing to the continued commercial depression, but they hoped and believed that with an early revival of trade the stock of arsenic in hand would be disposed of more readily, and he had now the pleasure to report that these anticipations had been realised. Just before the commencement of business at the last half-yearly meeting the directors entered into a contract for a very large quantity of arsenic with Messrs. Field, of the Cornwall Arsenic Company, and the arrangements were promptly carried out. This had enabled the directors to pay off the 7000*l.* borrowed from the bankers, of which 100*l.* had been paid off at the last meeting. He wished to correct an impression that the company had made 10,000*l.* profit; it had simply been transferred from the balance-sheet made up to April 30, and had since been sold, and realised 10,000*l.*, and after that the sum of 6000*l.* had been paid off, and the cash accounts of the company consequently showed a better balance to-day. He was sorry to say that instead of making any profit they had made a very serious loss, which he should touch upon as they went on. The large importation of 3800 tons of Chili copper which came in last week had completely annihilated the market for the time being; it took everybody by surprise, and Chili bars were quoted to-day at 55. The working, dressing, and making marketable this 20*s.*, 25*s.*, or 30*s.* ore entailed a very serious expense upon the company, and a practical mining man near the mines had written to him to say that it would be a very good thing indeed if they could decrease the output of some of the low quality ores, and sell some of the higher qualities. He hoped the shareholders would leave this matter in the hands of the directors to see what really could be done. (Hear, hear.) He had hoped that some improvement would have been made in the dressing-floors and in the mode of dressing the ores, for, however perfect the dressing operations might have been in the past, there were continual improvements cropping up, and the improvement of the dressing operations would receive the attention of the directors hereafter. During the last two years there had been a good deal said about making a call; he could assure them that, being the largest shareholder, and holding nearly one tenth of the concern, it was a serious matter for him to contemplate a call. He might also mention that he had received letters from various shareholders protesting against a call, and stating that if the mine could not be carried on without a call, and by reducing such heavy cost, the best thing was to shut it up. (Hear, hear.) Moreover, owing to the recent disastrous bank failures and other causes, many of the shareholders were utterly unable to face a call. Knowing these matters, it behoved him to act fairly, honestly, and straightforwardly to the shareholders in this matter, and to do justice both to the shareholders and also to the men whom they employed. (Hear, hear.) He should mention that the accounts were a statement of receipts and expenditure, and did not profess to be a profit and loss account, and the balance-sheet showed the capital and liabilities and the property and assets of the company. Every farthing which had come in had gone to pay the royalties, the merchants' bills, and those employed. The proper way to look at the matter was this; on the one hand they must take the quantity of ore which had actually been sold for the last twelve months, and also the make of arsenic, and on the other hand they must take the cost, and the result was that a loss was shown for the twelve months of 4672*l.* 2*s.* 6*d.* on the working of the company. He would next proceed to call their attention to the question of wages and the number of the hours of work. Now, a great deal had been written and said with regard to the payment of the men employed by the company, and he desired to set this matter right once and for all. He had not, and he would not, answer any anonymous communications, but if he found any libellous matters, such as he had seen in papers, he should, in the interests of the shareholdders and the interests of the directors, take steps to put the matter right, because he would not have such things go forth to the public, nor allow it to be stated without contradiction that the directors were not doing justice to those employed. (Hear, hear.) The earnest intention of the directors was to do the best they could for the men employed, but those who were thus employed must go with the tide and with the times. (Hear, hear.) The shareholders had had to go with the tide and with the times, and had to suffer, and in all probability would have to suffer a great deal more, but he wanted to show that no injustice had been done to those employed by the company. In January, February, March, April, and May of last year the average wages of the men were as follows:—In January 15*s.* 3*d.* per week; February, 15*s.* per week; March, 14*s.* 10*d.* per week; April, 14*s.* 9*d.* per week; and May, 14*s.* 9*d.* per week. Then the five-weeks question arose, and the men retained their 13 pays, and 1-13th was to be taken off, which left 13*s.* 7*d.* per week, but instead of fixing it at 13*s.* 7*d.* he gave the men the benefit, and it was arranged to the satisfaction of the men that they were to have 14*s.* per week, and that was the basis, because when a bargain was set there must be some basis to go upon. Now as to the result of that. In July the men got 14*s.* per week, in August 13*s.* 11*d.* per week, and in September 13*s.* 6*d.* per week, being an average for three months of 13*s.* 10*d.* per week; in October they got 15*s.* 5*d.* per week, in November 15*s.* per week, and in December 15*s.* 10*d.* per week; and he might mention that whilst those wages were being paid to the men the company had sold copper ore at 1*l.* 15*s.* 1*d.* per ton, and when Mr. Morris went down to Truro he was informed that the smelters did not even care to take the ore at that price. In January the directors of this company saw something must be done, and that a further reduction of 10 per cent. must be made off the last month's average of 15*s.* 10*d.* a week, which would bring the men to the original 14*s.*, and a further reduction of 10 per cent. was also made in the payments to the agents, and economy introduced in every possible way. In January, with the 10 per cent. reduction, the men got 14*s.* 8*d.* per week; in February, 14*s.* 3*d.* per week; and in March last, of which so much had been said and written, the men actually got 16*s.* 4*d.* per week, making a weekly average for the three months of 15*s.* 1*d.*, which was similar to what they had in the past year. The price of the loaf had gone down from 8½*d.* to 5½*d.*, and other provisions and necessaries had also gone down 20 or 25 per cent. He had no hesitation in saying, and he stated it emphatically, that the men at Devon Great Consols were getting as good wages as the men at any other leading mines. In the three dividend-paying copper mines which he could mention the wages of the men for the last three months were 13*s.* 7*d.*, 15*s.* 9*d.*, and 14*s.* 2*d.* per week respectively, giving a weekly average of 14*s.* 2*d.*, and yet these were dividend paying mines, whereas the Devon Great Consols was losing at the rate of 5000*l.* a year. At one of these mines in Cornwall the men for the last three months had received weekly wages of 12*s.* 10*d.*, 13*s.* 7*d.*, and 15*s.* 6*d.*, the average for the last two months being 14*s.* 7*d.* Again, in tin mines he could mention, the men were getting 15*s.* to 16*s.* per week, but it must be borne in mind that in some of the deep mines the men were paid, and properly paid, a shilling or two per week more. In the lead mines in Cornwall the wages were 14*s.* and 15*s* per week, in other mines further eastward 14*s.* 9*d.* per week, and in another mine which was known to Capt. Richards, the average weekly wages for the past six months had been 14*s.* 4*d.*, and yet it was said that the Devon Great Consols men were not getting so much as the other men in the district. Going on to give further figures, he referred to other mines in the neighbourhood, in which the men received as follows per week:—15*s.*, 15*s.*, 14*s.* 3*d.*, 14*s.*, 13*s.* 6*d.* In the Shropshire deep mines the wages averaged weekly 14*s.*, 15*s.*, and 16*s.* In the Welsh mines the wages were 10*s.* 9*d.*, 14*s.*, 14*s.*, 12*s.* 6*d.*, giving an average of 12*s.* 3*d.* Another mine had been working for three months at an average of only 8*s.* 9*d.* weekly wages, and others at 12*s.* 7*d.* and 12*s.* If they went to Durham they would see weekly wages of 11*s.*, 12*s.*, and 13*s.* He had received a letter from the men, and as he always wished everything to be placed fully and fairly before the shareholders he would read it to the meeting. (This he then read.)

The CHAIRMAN remarked that the letter was sent to Capt. Richards signed—"The Men of Wheal Emma." That morning they had received a further appeal addressed to the shareholders, passing by the directors, which was also signed by the "Miners of Devon Consols," and he would ask that this might be read.

Mr. STEWART: I do not think it should be read.

A SHAREHOLDER: We do not know that it is from men working at our mines at all, not being signed by the several men.

The CHAIRMAN: You will do me a favour if you will allow it to be read.

Mr. ALLEN then read the appeal.

Mr. STEWART thought it was time to stop the educational grant when it resulted in "reading between the lines" and "logical sequences." (Laughter.)

The CHAIRMAN, continuing his remarks, said that when the wages question was settled on June 17 at Tavistock, nothing was said about Maze Mondays, but it was subsequently introduced, and when Capt. Richards came up in March he (the Chairman) said—"Why cannot the men go to work at six or seven o'clock on Maze Mondays as they do in other mines?"—and eventually a resolution was passed, and after three weeks' notice the men struck against it. They afterwards went to work, and only a month ago he enquired as to the holidays at Devon Consols, and he found to his utter astonishment the state of things which had existed. In the leading mines in Cornwall the general holidays were Good Friday, Christmas Day, and perhaps half a day on Whit Monday, but for that the men went to work very early in the morning, whereas at Devon Consols they had been having New Year's Day, Good Friday, Easter Monday, Whit Monday, Midsummer Eve (half day), Midsummer Day, Christmas Eve (half day), Christmas Day, day after Christmas Day—and that these were observed at surface as well as underground—and Captain Richards stated that this state of things had existed from the commencement. (Shame.) This represented an enormous amount of idle time. Mr. John Taylor, in sending the proxies for himself and his brother, said he would if possible attend the meeting and argue against Maze Mondays, and all such abominations, and that if the English miner would not perform a greater amount of work for the wages which could be afforded to him he would have to seek another climate. He thought that at Mellanear and West Tolgus no Maze Mondays were allowed, and the Chairman added that he had since found this to be correct. Our men at Devon Consols had really been having, including Saturday half-holidays, 46½ days in the year. (Disgraceful.)

Mr. STEWART thought it was disgraceful that such a state of things should have existed. The men had been getting their wages while the shareholders were getting nothing on their capital. Why had not this been seen to earlier?—The CHAIRMAN replied that he had not known of it. He thought the miners should be glad to work on Maze Mondays, but some few years ago they wanted Maze Tuesday, and some of them Wednesday and Thursday also. (Laughter.) He thought the fact should be impressed on miners that it would be to their benefit to do away with so many holidays, retaining of course the Saturday half holiday. In 1872 they should have done what the other mines did throughout Cornwall and have proper arrangements made with regard to the holidays. The shareholders would remember the "thirteen week's" question with the men, which was at last settled by deducting a thirteenth from the wages.

Mr. STEWART asked if the men were paid when they did not work?—The CHAIRMAN replied that the wages were fixed upon a basis—so much a week—and it was to the interest of all concerned that the proper number of days should be worked. He would only be too happy if they were getting more for their copper, so that they might afford to pay the men better, but this was out of the question while the company was losing nearly 5000*l.* a year. It would have been better to have suspended operations a year ago than to have gone on selling at such ruinous prices that it was like giving the stuff away. With regard to the expenditure, it would be remembered that twelve months ago there was the very large item of 751*l.* for land damages, and now another item of 126*l.* had cropped up for damaged land extending over a period of 15 years. This was a very bad principle, for they might hereafter have similar claims of 1000*l.* or 2000*l.*, and he thought it was a pity that these amounts were not paid when the company was paying handsome dividends. (Hear.)

Mr. T. MORRIS said he had enquired at the Duke of Bedford's office, and the information he received was that this land had nothing to do with that for the damage of which they had already paid 700*l.*, but it was in the neighbourhood of the arsenic works, to which a little damage had been done each year, and it was impossible to value it earlier. If the land had been entirely ruined they would have had to pay 80*l.* per acre, whereas they had only to pay 40*l.*

Mr. STEWART thought Mr. Morris must have known the damage was being done.

Mr. MORRIS replied that the valuation could not be obtained at an earlier date.

The CHAIRMAN still thought it a pity that this should have been accumulating for 15 years. Everything was now, however, charged up as closely as possible, and he believed that hereafter they would be able to get their merchandise at a great reduction upon the previous prices. He said this after making full enquiries. With reference to the next question—that of dues—the shareholders were already informed in the report how that matter stood. With respect to the giving up of operations at Richards' and Thomas's shafts, he supposed those had cost the company from first to last perhaps 30,000*l.*

Mr. MORRIS: Not quite so much, but it has relieved us of that cost.

The CHAIRMAN said the dues were now fixed at 1-18th, but he hoped the Duke of Bedford would have the kindness to take the matter further into his consideration, for some of the richest mines in Cornwall were only paying from 1-30th to 1-60th. He believed they would be able to employ boring machinery profitably at the mine. With regard to the loss of Mr. Allen, who had been for so many years the secretary of the company, for some time his work had really been done by his grand-nephew—Mr. W. H. Allen—who had been indefatigable in working with him (the Chairman) almost night and day for the last two years; indeed, he did not know what he should have done without his valuable assistance, and the directors would not forget these services. The late Mr. Allen continued to receive his salary until he died, although he wished to resign, but he (the Chairman) knowing that Mr. Allen had nothing else to live upon, would not let him give up, but, with the assistance of the present secretary, did the work for him. The late secretary always did his work well, and his loss was a matter for regret. With regard to the resident director—

Mr. MORRIS: I have determined not to seek re-election, and to retire at Midsummer. I can relieve the Chairman from any unpleasant reflection.

The CHAIRMAN: I do not desire to make any. Mr. Morris had been for many years connected with the company. With regard to the question of having a managing director he had been performing those duties without any extra emolument, for there were many things which a managing director could do that a chairman could not, and he had been asked by a great many of the oldest and largest shareholders to consent to be the managing director, and his colleagues had also asked him to accept the position. He would do all he could for the welfare of the company, seeing the large interest he had in it, and he would be happy to accept the post. (Hear, hear.) Mr. T. Morris did not seek re-election, and Lord Claud Hamilton had been solicited to become a director, and had consented to do so. Lord Claud had visited the mine, and had taken a great interest in its progress, and the directors would welcome him as a colleague. The agent's report stated that the lode had been cut at the 205 fm. level, but he was sorry to say poorer than at the 190. Capt. Richards, however, now said that the lode was looking a shade better, and altogether the mine was about the same as it had been for some time. They had obtained a new lease of the Tamar fishery at a reduction of 20 per cent. The Chairman, again referring to the question of labour, said that since 1872 provisions had fallen 40 or 50 per cent., and as the *Times* had pointed out wages must go still lower if we are to compete successfully with foreign nations. They were bad enough no doubt, but what could employers do. There was great distress in Cornwall, and subscriptions were being raised for those who were out of work. If this company gave the men an increase it could only be done by the making of a call, but the shareholders who had paid 30*l.* or 40*l.* per share for their holdings, and could not sell them for more than 30*s.*, could not pay a call. They were giving 22*l.* per fathom for shafts, which cost 16*l.* in 1873; 11*l.* 6*s* 1*d.* for driving now, as against 6*l.* 5*s.* 9*d.* in 1872; and 14*l.* 15*s.* 6*d.* for winzes and rises, as compared with 7*l.* 18*s.* in 1873; and these were additional reasons why they should hope for some consideration at the hands of the Duke of Bedford, and he hoped His Grace would on the proper presentation of a memorial, or the reception of a deputation, concede their claims for a reduction of the dues. He trusted that the men would be reasonable, and co-operate with the shareholders for their mutual benefit, so that operations might not be suspended. In conclusion, the Chairman moved the adoption of the reports and accounts. (Cheers.)

Mr. PIGGOT seconded the motion, and said that in the accounts a few years ago they had a credit of 1200*l.* or 1400*l.* for Colcharton, which did not appear now.

The CHAIRMAN replied that the item was only 50*l.* when it last appeared.

Mr. T. MORRIS said that the steam-engine was sold for 500*l.*—a far better price than could be obtained now, and some materials were also sold.

Mr. ROBERTS asked how many agents were employed at the mines during the period of their greatest prosperity? how many there were in 1872 when the dividend was paid? how many for that time and at present, and whether any reduction in their number could be made without impairing the efficiency of the aggregate work done at the mine? (Hear.)

The CHAIRMAN said that he was not one of those who were fortunate enough to be a shareholder at the time of the company's prosperity. Capt. Richards said these were several agents and clerks less than at that time, and now numbered 16 or 17, including the engineer, &c. He did not think that the work could be done efficiently by a less number.

Mr. HEADING remarked that the extent of the levels had been materially increased since that time; and Mr. MORRIS added that after an experience of so many years he could vouch that a better staff than theirs did not exist.

In the course of the discussion which followed, Mr. HEADING advocated that the work should be let on a basis of *s.* per month; while Mr. STEWART, MIRZA PEER BUKHSH, and other shareholders, strongly deprecated any increase in the men's wages while the company was losing so much, and at the probable expense of a call. (Hear, hear.)

The CHAIRMAN briefly replied to the questions raised, and the reports and accounts were then unanimously adopted.

Mr. STEWART then proposed a resolution altering the Articles of Association so as to admit of the appointment of a managing director, and expressed the hope that Mr. Watson would be induced to accept the position; if he did not, he (Mr. Stewart) was afraid there would be no future for the company.—Mr. FITZGERALD seconded the proposition, which was carried *nem. dis.*

On the motion of Mr STEWART, seconded by Mr. TAYLOR, the directors were voted 400*l.* for their services, divisible according to attendance.

The CHAIRMAN, replying to an observation, said that when he came into office the costs were 3300*l.* per month, and there had been effected a reduction of 1000*l.* a month, or 12,000*l.* a year, but it would have been better for the shareholders if the company had suspended operations twelve months ago. (Hear, hear.)

Mr. TAYLOR proposed the re-election of Messrs. Peter Watson, H. Stanley Morris, and Henry R. Trehern, and the election of Lord Claud Hamilton in the room of Mr. Thomas Morris.—Admiral STODDART seconded the proposition, which was carried unanimously.

Mr. G. J. Rait was re-appointed auditor, Mr. H. C. Stewar being appointed with him for the ensuing year. The CHAIRMAN referred to the valuable services rendered to the company by Mr. Rait.

Some discussion took place with reference to the educational grant, Mr. STEWART maintaining that when the men were educated up to "logical sequences" it would be as well to stop educating. The grant of 31*l.* 10*s.* was, however, on the motion of Admiral STODDART, seconded by Mr. HEADING, voted.

On the motion of Mr. STEWART, seconded by Mr. FITZGERALD, it was resolved "That this meeting, after taking into consideration the unsigned appeal from the miners and others, regret that they are unable to comply with the request therein contained, and that the whole matter with regard to wages and holidays be left with the directors."

A special vote of thanks was passed to the Chairman—Mr. Peter Watson.

Votes of thanks were passed to Mr. T. Morris on his retirement, and to the directors. The proceedings then terminated.

[There was a large attendance of shareholders, representing in person and by proxy some 8000 shares out of the 10,240 shares in the company.]

WHEAL JANE MINING COMPANY.

A three-monthly meeting of adventurers was held at the mine on Tuesday, Mr. JOHN HOCKING, jun., the purser, in the chair. Some objections has been taken by a London shareholder to the meeting being held on the mine, but it will be remembered that the executive were very much found fault with for holding a meeting or two in London before people who know nothing of the real position of the mine beyond what they are told by the agents. Cornish adventurers have a strong objection to meetings being held elsewhere than on the mine, where they can go and see for themselves what progress is being made, and whether the mine is being worked in a miner-like manner. On this occasion Capt. Southey could with just pride call together the adventurers, whether in Cornwall or out of it, to see what had been done on the mine during the last twelve months, and the means he has adopted to reduce the expenditure at surface, and any adventurer who had not seen the mine since the change of management two and a half years ago could not help being struck with the great improvements that have been made since then. The London adventurers may well feel assured that with the eyes of the Cornish adventurers on the mine their interests will be better looked after than if the meetings were held in London, where questions from practical miners are rarely put. While, therefore, Capt. Southey and the executive may be found fault with by one or two London shareholders who cannot come down and attend the meetings, they have the support of those who can attend the meeting, and the result is altogether more satisfactory, and to the advantage of the general body of creditors. As a proof of the energy which Capt. Southey has thrown into the management of the mine, it need only be stated that during the last two and a half years in which he has had the management there has been raised and sold from the mine 450 tons of tin, which is equal to 15 tons a month on the average, and this is 5 tons more a month than the old management said it was possible to return. And Captain Southey has not only done this, but he has so cheapened the production that he has been able to make a profit at 8*l.* less per ton than the price the old management said the mine could be kept going at, indeed could not pay at.

The statement of accounts for the three months showed an expenditure of 1714*l.*, including labour costs 954*l.*, bills 652*l.*, and dues 107*l.* Tin sold, 1918*l.*; and in addition to this 1158*l.* worth had been sold from the tin in stock (30 tons, at 38*l.* 5*s.* per ton), but this was not credited against the three months' working, on which a profit was shown of 23*l.* The 82 tons sold realised from 36*l.* 7*s.* 6*d.* to 38*l.* 5*s.* per ton. Crediting 659*l.* for calls received and the above profit, the adverse balance at last account—2921*l.*—is reduced now to 2108*l.* They owe altogether 7019*l.*, including to merchants 1999*l.*, to their bankers 3820*l.* Against this debt of 7019*l.*, there is set down tin in stock 4608*l.*, and other assets, leaving a balance against the adventurers, as already stated, of 2108*l.*

The agent reported as follows:—Since the last general meeting of the shareholders we have communicated the intermediate level alluded to in the last report with the stopes in the shallow adit, the lode throughout the drivage varying in value from 5*l.* to 10*l.* per fathom. An end being driven east on the north part of the lode at the deep level is worth for the part carried 20*l.* per fathom; driving by four men, at 11*l.* per fathom. In advance of the present end 7 fms. we are putting up a rise, and when communicated with the level above a large section of stoping ground will be laid open, which can be taken away at a very cheap rate. This we hope to accomplish in about two months from the present date. In the deep adit level we are driving a cross cut north through the lode under the shoot of tin spoken of in the shallow adit. We have driven in the lode 10 fms.; the end is improving, and we have several fathoms yet to drive to reach the north wall, and the probability is that a good lode will be met with. It is satisfactory to see the improvement at this, the deepest level, and when the north wall is reached ends will immediately be driven east and west on the most productive part of the lode. This will lay open a very extensive piece of ground in reserve which will take many years to take away. In the ground being laid open the lode contains an immense quantity of sulphuric mundic, and we have no doubt that if the necessary appliances had been erected to treat the same good profits would be realised. We have had the matter under our serious consideration for some time past, and we feel perfectly justified in recommending it to your notice. Mr Hocking will lay before you Dr. Oxland's report, which will I think throw a great light on the subject. The alterations in the dressing-floors are being pushed forward as fast as possible, and a great saving in this department is already effected, but much more remains to be done. We have every reason to believe this will be accomplished in the ensuing four months, when the costs throughout the mine will be reduced to the lowest possible figure, and at the same time we do not see any reason to fear for the returns of tin. Therefore, in conclusion, we may say that our future prospects, with only a moderate price for tin—say 40*l.* per ton—are in a very good position.

The CHAIRMAN stated that he had made out a list of shareholders in arrear of calls, and he had received some letters back through the dead letter office, addressed to people who were in arrears.

It was resolved that the purser should take proceedings against those in arrears.

The CHAIRMAN said the services of their manager had been very valuable to them during the last 2½ years. If they only looked at the cost-book they would see at a glance that a great saving had been effected not only in the dressing of the tin, but Capt. Southey had gone on since he had been with them making improvements on improvements. In fact, everything had been kept up to the mark, and everything watched closely, involving a great deal of labour on the part of a mine manager. He thought it was a matter of congratulation that an additional agent was not required to relieve Capt. Southey, and he would suggest, if it met the views of the adventurers, that Capt. Southey's salary, which was now the hard earned sum of 6*l.* per month, should be increased.

The motion was seconded by Mr. TREGONING, and carried unanimously.

Capt. NANCARROW expressed his opinion that it would be better to have an underground agent, but Capt. Southey said he had a pitman to do the work, second to none in the county of Cornwall, and he would not advise the adventurers to employ an underground agent yet, but they could do so if they were prepared to lay out 100*l.* more a-year in a white jacket man.

Mr. GRANVILLE SHARP said it would be better to let Capt. Southey pursue his own course, as he had so ably held the management thus far.

Mr. SMITH thought that if the work was going on progressively, and Captain Southey did not grumble, they ought not to have anything to say in the matter, and the subject then dropped.

The statement of accounts and the report were then passed.

A discussion arose as to the advisability of converting the fumes from the chimney of the calciner into sulphuric acid, the Chairman remarking that it would be very desirable if it could be done, but the thing was whether they could get a market for the article after they had produced it. He had read in the *Mining Journal* articles on mines in the northern part of the county condensing their fumes in lead chambers. This question was one which had been discussed many times before in that account house. Some years ago they were in a position to take the whits and work the acid on their own account, but then it was thought too big a thing for any private party to work. It was a question that required a great deal of consideration, as it might lead to a call which might not be very acceptable. It seemed a pity that so much valuable stuff should be wasted as it was at present.

Mr. LIDGEY thought a market could be found for the article if they could make it. Messrs. Vivian and Sons were using it to a large extent for their manufactured manure. There was a very large demand in copper mills for preparing yellow metal sheathing, but one of the largest uses was for making common soda.

Mr. LOWRY recommended that the purser should make himself acquainted with the trade, and find a market for the article.

Mr. SMITH said if they could see their way clear for the manufacture of the stuff at a profit, they ought to proceed to do so at once.

The CHAIRMAN said there would come a time when the Act of Parliament would compel them to condense their own fumes, and that would cost at least 1000*l.*; and he thought if it came to that, it would be advisable to go in for another 1000*l.* and get appliances for the calcining of the whits, and see if they could not make it a paying thing.

It was ultimately resolved to make an application to the lords of the mine to ascertain on what terms they would permit works to be erected on the mine for the purpose of converting the fumes now escaping from the calciner into sulphuric acid, and to instruct the purser to ascertain what probabilities there were of a market being found, and to report at the next meeting.

The adventurers afterwards dined together, and Mr. SMITH, after dinner, in proposing the health of Capt. Southey, said that since he had had the management of the mine the costs had been considerably reduced. They might have to face the present prices of tin, but he believed with such management they would be able to succeed. In going through the floors they would be able to see that a considerable saving had been effected. Wheal Jane could produce the tin as represented in their books. During the last four months working they had sold from 40 to 50 tons of tin and 550 tons of mundic, the produce of that mine. During the past eight or nine months they have spent a considerable sum of money, but he could see good value for the expenditure. During the more prosperous times they had paid in dividends as much as 25,000*l.* They were in a satisfactory state, and he thought Capt. Southey would bear him out in saying that even with a moderate price for tin they would be able to pay a dividend to the shareholders.

Capt. SOUTHEY, in reply, said that during the time they had been there they had been doing nothing but spending money, but as regarded the costs of the mine they had pulled them down to a very considerable extent, and they might still decrease them. In the first place, when they went there they put up a calciner, and from that to a stone-breaker; then they had to go and remodel their stamps, and now their stamps would stand for the next ten years. As the costs were still being reduced he believed that they would be able to meet costs at 32*l.* per ton for tin.

Mr. GRANVILLE SHARP said that when Capt. Southey took the mine in hand he went underground with him and scrutinised the concern thoroughly, and was convinced that certain improvements could be made. Having confidence in it, coupled with the management, he interested himself, and recommended others to do so. He would say to those present that the mine was safe, and would recommend them to stick to the ship as long as Capt. Southey was in the management.

Other toasts followed.

GAWTON COPPER MINING COMPANY.

The meeting of the adventurers was held on Thursday at the offices, Austinfriars—Mr. GENERAL HUNTER in the chair.

Mr. JAMES HICKEY (the secretary) read the notice convening the meeting, and the minutes of the last general meeting.

The accounts for the four months ending March 28 showed a loss of 359*l.*, or about 90*l.* per month, the result being a debit balance of 637*l.*

Captain Rowe's report was then read, as follows:—

May 27.—We beg to hand you the following report of this mine for the general meeting to be held on the 29th inst., which is as follows:—Since the last general meeting our principal operations have been confined to working upon the south part of the lode discovered at the 105 and 117, and making the needful communication near the east point of the deeper parts of the workings, and opening upon the lode at the 117, west of the cross-cut, where the drivage is carried over 6 feet wide in a parts of the lode producing 2 tons of ore per fathom in places, and very strong arsenical mundic—altogether of a very promising appearance. Also extending the drivage, west of the 105, on the south part of the lode, which is 6 ft. wide, producing in places arsenical mundic and copper ore intermixed to the amount of 3 and 4 tons per fathom. At the same time working upon the productive parts of the lode above and below the 105 at three different points, where the stopes are valued at 8*l.*, 9*l.*, and 18*l.* per fathom, the latter going east into whole ground, which is a most important point, where we purpose to resume the drivage by a full staff of men at the earliest convenience, and the principal part of the present operations continued with an increased number of hands as the nature of the work from time to time may require to increase our monthly returns both in quantity and quality by the additional application of suitable appliances for the purpose of increasing the percentage of our copper ores, and extracting the arsenic, of which the greater part of our copper ores are so heavily charged.—GEORGE ROWE, GEORGE ROWE, jun.

The CHAIRMAN said that in proposing the accounts and reports be received and adopted he had not much to say further than that they presented a very unsatisfactory result as compared with what they had been led to expect, inasmuch as the source of their drawback with regard to the returns was the increase of arsenic in the copper ores, which reduced the value of both in the market. The consequence was that according to the statements they had received from Mr. Bewden, and also from Captain Rowe, if these two metals had been separated they should have had a greater return for their copper, and also a considerable return for the arsenic—something like 50 per cent. more returns than they had realised in the last four months. The lode appeared to become more arsenical in its character as it was opened out. The last sales had realised only an average of 21*s.* 9*d.* per ton, as against 33*s.* in the previous four months, 2*l.* 1*s.* in the four months before that, and 2*l.* in the four months preceding, so that last year there was an average of something like 2*l.* 1*s.*, which had fallen to 35*s.* and 21*s.* 9*d.* The quantity had not diminished much, but the price was killing them. The Chairman then proposed that the accounts and reports should be received and adopted, and that a copy should be forwarded to each adventurer.

Mr. MCCALLAN seconded the resolution, which was put and carried.

Capt. Rich's report was then read, as follows:—

April 21.—In carefully inspecting Gawton Mine I observe that the 117 fm. level is driven on the flookan or north part of the lode, some 80 fms. east of the engine-shaft. At or near the end of this drivage a cross-cut has been put out, and intersected the south part of the lode. The end east is suspended, and the men employed driving west, which is extended about 3 fms. from the cross-cut. The lode in this end is 5 ft. wide, composed of arsenical mundic and low quality copper ore; the ground is hard and the progress slow. The 105 is extended some 90 fms. east of shaft. A cross-cut has also been pushed out at the 105, and intersected the south part of the lode. A winze has been sunk in the bottom of this level, and communicated with the level below. The lode east and west of this winze is being stoped on tutwork. The stope east of the winze is worth 12*l.* per fathom. The stope west of the winze is worth 9*l.* per fathom. There is also a stope in the back of the 105 working by two men. The 105 end is being driven west by two men; the lode is about 5 ft. wide, and yields stones of ore, but I have an opinion the drivage, if continued west on the south lode, will hole out to the old level that has been driven on the north part. The operations in the mine are confined chiefly to the bottom levels—the 105 and the 117, and the exploratory tutwork consists in driving two ends west on the south part of the lode. These ends in my opinion are likely to unite with the old levels if continued. The south part of the lode appears to be diverging from the north part going eastward, and is running into virgin ground, with an increased depth, owing to the rise of the hill. I should, therefore, advise you to push on the 105 and the 90 eastward by at least four men in each end. At the same time I would increase the number of stopers in the bottom of the 108, especially east of the winze, with the view to get up as much copper as possible. You have a great extent of unexplored ground before you east of shaft, and if no explorations are made it is evident that there will be no discoveries. I think there are fair and reasonable chances of success if the levels spoken of be driven on the course of the lode. The lode is of good width, and I notice that it carries a good deal of arsenical pyrites, and also some good copper ore intimately blended with it. There can be no doubt but that to render these products marketable to the best advantage kilns should be put up to calcine the arsenic and precipitate works for the copper, but this would involve a considerable outlay on the part of the company, which would have to be called up from the pockets of the shareholders, as the mine at present is hardly self-supporting. If the company were to make this outlay I believe it would pay, but I would like to see the underground works fully developed, and some discoveries made underground before I could strongly advise the erection of arsenic works. You have large quantities of arsenic at surface, and if you do not decide to put up kilns to reduce it, I should recommend that the same be sold in the stone forthwith. The proceeds would help to put out the 90 and the 105 eastward on the course of the south lode, and there is reason to hope that discoveries will be made.—WM. RICH.

The following report from Mr. Bawden was also read.

May 23.—By request of the committee I have made a careful calculation of the loss the company sustained by selling the low-class ores at the Ticketing held April 17 last, without first realising the arsenic. The ore sold at the Ticketing was as follows:—

Tons	cwts.	Produce.	Price.	Value.
75	2	2¼	£0 12 6	£ 47 2 10
70	15	3⅜	1 9 0	102 10 8
61	0	2½	0 10 0	30 10 0
20	9	7¼	2 5 6	46 9 6
227	12			£226 13 0

Tons.			Tons	cwts.			
75 at 20 per cent.	for arsenic	=	15	0	at £3 15 0	=	£ 56 5 0
70 „ 12	„	„	8	8	„ 3 15 0	„	31 8 6
61 „ 20	„	„	12	4	„ 3 15 0	„	45 14 3
206 tons							£133 7 9
Cost of treating 206 tons at 6*s.* per ton							61 16 0
							£71 11 9

Tons ore.		Tons c.	Produce.				
75	reduced to	55	0 ... 3¾	= £1	6 0	= £ 71 10 0	
70	„	49	0 ... 4¼	„ 1	15 0	„ 103 5 0	
61	„	46	0 ... 3⅛	„ 1	2 6	„ 51 15 0	
		20	9 ... 7¼	„ 2	5 6	„ 46 9 6	= £272 19 6
		180	9				£344 11 3
Price realised							226 13 0
							£117 18 3

By the above calculations, which I consider quite within limit, it will be seen that over 50 per cent. more would have been realised for the 227 tons of ore sold on April 17 last. I estimate that for 500*l.* we can erect the necessary appliances to treat the low class copper ore we are at present raising; and with this outlay (the payment of which can be spread over at least 12 months) we shall be enabled to prove, I doubt not, to the satisfaction of the shareholders, that the money has been well spent.—MOSES BAWDEN.

Mr. BAWDEN added that he had been very careful about these calculations. He had laid them before one of the largest arsenic producers in the county, and had asked if he were within the limit, the reply being that they could do that and more. There was one thing certain, the copper ore was so much intermixed with arsenic that to sell it as copper would bring but a poor return. He had calculated that if they made a call now to meet the existing liabilities they would not want a further call to meet these extensions.

Mr ROSEWARNE considered Mr. Bawden's report very satisfactory. He had understood it would require a heavy outlay, but as it appeared that 500*l.* would cover the whole expense he could not consider it otherwise than satisfactory.

Mr. BAWDEN remarked that there was sufficient arsenic on the mine now raised to prove whether it would pay or not, and to pay the expense of putting up these works. Capt. Rich had said it would cost a lot of money, and he would say the same if they intended to lay out the whole of the works they thought they would require for three or four years. He advised them to start quietly to see if it would pay, and then to go on gradually increasing the works, letting them at the same time pay for themselves. (Hear, hear.)

The CHAIRMAN said they had heard Mr. Bawden, and they must either accept his statement and carry out his recommendations, or at once accept the leek and shut up. The committee had discussed the matter with Mr. Bawden, and he believed he would say that he did not know Mr. Bawden's equal as a mining man in Cornwall. He should have been dubious about a recommendation from ordinary mining men, but he believed they were perfectly safe in adopting the recommendations of Mr. Bawden. Capt. Rowe had been urging them to make an outlay for arsenical works for the last 12 months, but the times had been so bad that they had been afraid to tackle the matter.

Mr. BAWDEN thought it was due to Capt. Rowe to say that he had been with himself pressing this matter for some time past.

The CHAIRMAN said that there was a balance against them of 637*l.*, while the arrears of call would realise about 70*l.*, and the forfeited shares stood as an asset at 111*l.* What they proposed to do was that a call of 4*s.* per share should be made, payable forthwith, a discount of 5 per cent. being allowed on all payments before Wednesday, June 25. This call would produce in round numbers about 720*l.* He at first thought of making a call of 5*s.* per share, but the committee had decided that 4*s.* would be ample to cover existing liabilities.

Mr. ROSEWARNE then proposed that a call of 4*s.* should be made, which was seconded by Mr. ROBINSON, and agreed to *nem con.*

It was stated that stringent measures were being taken to recover the calls in arrear, and it was agreed to call a special meeting for the forfeiture of shares in arrear of calls.

The CHAIRMAN said he had much pleasure in moving a vote of thanks to the lords of the Gawton minerals. Lord Mount Edgcumbe had handsomely remitted 120*l.* arrears of rent which he could have claimed, to a nominal rental of 1*l.* per annum. (Applause.) And the other lords—Messrs. Windeatt and Bayly—had waived their claims since 1874, which was equivalent to something like 622*l.* (Applause.) He would add that he had never been met in a more gentlemanly and generous way than by Mr. Bayly, and had it not been for this generous consideration Gawton would have been snuffed out long before now. (Hear, hear.)

Mr. BAWDEN seconded the vote of thanks, and remarked that it was a most important thing that the lords of Gawton had so favourably considered the applications made to them. If other lords were to do the same, he believed mining in Devon and Cornwall would be carried on more successfully than it is at the present moment. (Applause)

The resolution was put to the meeting, and carried unanimously.

The committee of management were then re-elected, and power given to overdraw the account with the bankers to a sum not exceeding 800*l.*

Cordial votes of thanks were next passed to Mr. Bawden, Capt. Rowe, and the Chairman and committee, and the meeting separated.

PRINCE OF WALES MINING COMPANY.

A general meeting of shareholders was held on Friday, Mr. J. Y. WATSON in the chair.

The CHAIRMAN stated at the last meeting it was decided to set a few pitches in the silver lode, and keep the mine going at a small cost, with a view, if times improved, of selling it as a going concern, or of forming a new company to work it; also to reduce the liabilities, and to get in arrears of calls. The great depression in mining, which has seemed rather to increase than diminish, had rendered futile all attempts to treat for the disposal of the property, but the liabilities have been so reduced that the arrears of calls now due would about pay them off, leaving the machinery, which has been valued at 800*l.*, intact. And seeing no use in going on further in the present state of the times, he recommended that the company should be wound up, that legal steps should be taken to enforce payment of the arrears, and the mine advertised for sale as a going concern, and if no response, notice to determine the lease should be given and the machinery sold. If these steps are taken no call would be necessary at this meeting, and it may be adjourned for three months. The accounts show liabilities over assets, including rent to the Duchy of Cornwall, of 31*l.* 1*s.* 3*d.* The machinery at a low valuation is estimated at 880*l.*, and is worth more for a going concern, but if sold by auction piecemeal in these depressed time, may not fetch anything like that amount. Itt will also cost some pounds to get up pumps and fence round the shafts, &c.

The report of the agent having been read, and the accounts adopted and passed, it was resolved that Messrs. Watson and Parry be appointed a committee to wind up the affairs of the company. That they be and are hereby fully authorised and empowered to take all needful steps for the purpose of carrying the same into effect. That a special meeting of the shareholders be called for Thursday, the 26th, to confirm this decision.

EAST CHIVERTON MINING COMPANY.

A four-monthly meeting of adventurers was held on Wednesday at the mine—Mr. SMITH, of York, in the chair. The financial statement showed labour costs and sundries to the end of March, 647*l.* 8*s.* 10*d.*; merchants' bill, 374*l.* 18*s.*; and other small items made the total costs 1067*l.* 17*s.* The sale of 15 tons of lead, at 9*l.* 5*s.*, had realised 138*l.* 15*s.*, leaving a loss on the working of 929*l.* The total liabilities now were 1261*l.* 5*s.*, and against this assets were set down at 848*l.* These included arrears of call amounting to 330*l.*, and amount due on forfeited shares, 146*l.*; labour cost paid but not debited, 166*l.* 10*s.*; and lead account, 161*l.* 16*s.*

The CHAIRMAN asked if any proceedings had been taken against the defaulting shareholders since the last meeting?—Mr. GRANVILLE SHARP (the secretary) replied in the affirmative, and said they had been enabled to reduce the amount due on forfeited shares from 402*l.* 19*s.* 6*d.* to 146*l.* 13*s.* 3*d.*, and the amount due on relinquished shares from 287*l.* 10*s.* to 3*l.* 5*s.* now. The arrears of call, however, had slightly increased—from 320*l.* to 330*l.* 18*s.*

Capt. SOUTHEY (manager) stated that since the last meeting they had changed their pitwork and resumed the sinking of the shaft below the 74, and he hoped to have the shaft deep enough for another level—the 84—by next general meeting. The pitwork might have been changed two months sooner, but it would have been at the risk of flooding the mine. He, therefore, deemed it advisable to wait until the water had fallen off; and mentioned this because, no doubt, it would appear to some that the work had been a long time in hand. The 74 they had extended west about 20 fms. on the course of the lode, producing ore for more or less the whole of the distance. This spoke well for the next level. Is had been suggested to him by a large shareholder that the shaft should be sunk direct to a 94, but if the shareholders wished they could carry the shaft down 15 or 16 fms. before cross cutting to the lode, but he should not like to recommend a longer lift than that. In adopting this course they would, on reaching the 90, have 16 fms. of backs, and probably they would find the lode richer at this point than at the 82. In the adjoining mine the richest courses of ore were found between the 80 and the 110, and, therefore, it was desirable to get the shaft down without delay. He was sorry he could not report an improvement in the 64 cross cut south. The ground continued very hard there and spare for driving, and with the sanction of the meeting he would suspend operations there during the sinking of the shaft; but he would like to see the drivage resumed at some future time, as he had some grounds for believing the lode would prove a valuable one when reached. At present they were employing two horses at their drawing-whim, and as the shaft got deeper they would have to employ two more, and their costs would be about 20*l.* a month. It had been suggested that they should purchase a steam-engine for the more effectual and expeditious way of drawing the stuff. He had carefully considered this matter, and although it might be indispensable at the next level to have an engine, yet for the present he did not think there was any necessity for going to the expense of acquiring one. Everything in connection with the mine was, he was happy to say, going on in a very satisfactory manner.

The CHAIRMAN moved that a call of 5*s.* per share be made, and that the proposals of Capt. Southey respecting the future of the mine be agreed to.—Mr. WOODWARD, of Truro, seconded the motion, and it was passed.

This terminated the business.

WEST CHIVERTON MINING COMPANY.

A meeting of adventurers was also held on Wednesday,—Mr. SMITH presiding. The statement of accounts gave labour costs for 20 weeks amounting to 445*2l.*; merchants' bills, 271*7l.*, which, with sundry other charges, made the total costs 7521*l.* 14*s.* Receipts on account of the sale of blende amounted to 2272*l.* 17*s.* 3*d.*, leaving a balance against the mine (after striking out a large sum which was at first included as an asset, but was found unsaleable) of 3262*l.* 17*s.*

The CHAIRMAN remarked that the committee were sorry to meet the adventurers with such a heavy loss on the five months' working, but there were exceptional causes which had led to this, and which, he thought, they would all allow were unavoidable. For remedying these he thought great credit was due to the agents and the captains of the mine for the energy and perseverance they had shown. Under the circumstances the committee, at a meeting held a short time ago in London, thought it would be a satisfactory course to adopt to call the adventurers together on the mine rather than at the appointed time in London. The past winter had been very unfavourable to the working of the mine. The immense downfall of rain had caused a large influx of water into the mine, and previous to the last meeting in London they had found that this water had become impregnated with sulphuric acid, or something similar, which acted prejudicially on the boilers, and they had to undergo a thorough repair. Whilst these repairs were being carried out the lower levels became flooded, and they could not contend against it because their engine power was reduced. These levels were the most productive, and it was unfortunate that since January they had not been able to make one sale of lead because of the flooding. He did not think, however, any blame was to be attached to the executive. The mine was now in fork, and Mr. Hocking, the engineer, would explain better than he could that the boilers were now efficient, and since the mine had been cleared of water he believed the mine had been paying costs. With regard to the finances, at the last meeting it was resolved that a call should be made amounting to 9750*l.* Of course, only one instalment had been received of that, and the other two instalments of 1*l.* each would soon become due; in fact, one was due that day. They had intended the proceeds of that call to go towards liquidating the debt owing to the Cornish Bank, as they hoped at that time that the mine would be able to meet expenses. But as they would see there had been some extraordinary expenses, and they had been obliged to appropriate some of the call to meet these.

Capt. SOUTHEY pointed out that although the loss on the working appeared to be 992*l.* that included 900*l.* for extra month's cost. He then proceeded to read the agents' report, in which, after reviewing the points being worked, they stated—"During the past eight months we have had a succession of troubles with our boilers and breakages of pitwork, which caused the water to rise, and deprived us of our most productive ground in the mine. The difficulty, we are pleased to say, is now overcome, the mine is in fork, all the levels are in good repair, and everything throughout the mine progressing much more satisfactorily, so that we feel every confidence in saying that during the next four months we shall be able to pay the costs even with the present low price of mineral."

Mr. JOHN HOCKING, jun. (the engineer), informed the adventurers that since the last meeting they had completed and set to work the new balance-bob at Batters' engine, and it had, as was expected, effected a very great improvement in the working of the engine, and a considerable saving in the consumption of coal, and to such an extent that it would repay the outlay within twelve months. They had erected tanks for filtering the water, and the use of soda and lime for feed water in the boilers at this engine, in accordance with the recommendation of Dr. Oxland, and it seemed likely to effect all they had been led to expect would result from its use. The boiler had not given them so much trouble since it had been in use, but it was rather early to ascribe all the improvements to this cause, as the feed water itself might have been improved from the mine being drained, and being in the usual course of working. The present condition of the boilers led him to hope that they would have no further trouble from this cause.

The CHAIRMAN considered these statements very satisfactory, and moved the adoption of the report, which was agreed to.

Mr. SHARP, in reply to shareholders, said it must not be understood that there was a specific resolution at the last meeting that the call then made was to be devoted to paying the balance due to the trustees in the Cornish Bank estate. At the same time, they had hoped to hand over the whole of the money to the trustees, but they had not been able to do it because of the exceptional expenses. They had only paid 1000*l.* to the trustees. There was now due to the bank trustees 8366*l.* 8*s.* 6*d.*, and they had to receive in calls 5073*l.* 15*s.* That would leave 3293*l.* to be provided for to make up the amount, and the question was as to how they should meet this. Capt Southey had given them to understand that the working of the mine during the next four months would, in all probability, meet costs, and they would not, therefore, he presumed, require any call for the working of the mine during that period, but it would require 1*l.* 10*s.* per share to meet the amount due to the trustees after duly considering the matter.

The CHAIRMAN moved that a call of 1*l.* 10*s.* per share be made.

The motion was seconded by Mr. HOLMAN, and carried.

BEDFORD UNITED MINES.

At the half-yearly meeting of shareholders, held at the office of the company, Church-court, Clement's-lane, on Wednesday last, Mr. R. MCCALLAN in the chair, the accounts, which had previously been circulated amongst the adventurers, with the auditor's report thereon, were duly passed and allowed, and the directors' report received and ordered to be entered on the minutes.

The CHAIRMAN, having invited comment upon the accounts before them, expressed his satisfaction that the loss in the last six months had not been in excess of the estimate made at the last meeting, notwithstanding the continued depression in trade and the low price of metal. He had every confidence in the management, and quite agreed with the opinion often given that a slight improvement in the price of copper would place the mine in a position to make returns to the shareholders. That the mine was still very productive cannot be questioned. The report shows that a fair quantity of ground was being laid open, and he was informed that no more ore was being taken away than really paid its cost of being brought to surface, consequently a reserve was being made for better times. The quality of the ore he believed was, with one exception, equal to any being raised in the district. He did not despair of the mine again taking place in the Dividend List. He had been often asked by a gentleman for many years connected with a neighbouring mine (Devon Consols) why we did not let them have Bedford, but he always thought that if it was worth having it was worth keeping.

A SHAREHOLDER: Perhaps we may have the opportunity of buying Devon Consols before long.

The CHAIRMAN: That he did not know, but it was some assurance that they were not blind to the merits of our property.—He moved that the accounts be passed and adopted.

Capt. Goldsworthy's report was read, and he being present supplemented it by further information as to the future of the mine and a reference to the plans. He said with the present price of copper he considered he was working the mine fairly, and he could not conscientiously advise any departure from the present course of development, and as communications were made so he would be able to take away the reserves to better advantage. In reply to a shareholder, he said some tutwork operations might be suspended, but it was not advisable. He thought that if copper remained at it its present standard he should not lose more money, if so much, in the next half-year, but a very slight change for the better in the metal market would turn the scale in favour of the shareholders. He had every confidence in the mine, and had copper maintained its price of two years ago the property would have been in a flourishing condition.

It was stated at the meeting that in reply to an application to the Duke of Bedford for a reduction of dues his Grace had declined to entertain it, but agreed to contribute 250*l.* towards boring machines. As it is considered that further trials elsewhere with these machines should prove their superiority over hand labour, the directors have not recommended their adoption, and it was resolved to request his Grace to reconsider his decision, and make a reduction of royalty equivalent to that now being paid at Devon Consols—1-18th.

A vote of thanks to the Chairman concluded the proceedings of the meeting.

VANCOUVER COAL MINING AND LEAD COMPANY.

At the annual general meeting of shareholders, held at the offices of the company, Cannon-street (the Hon. C. W. W. FITZWILLIAM, M.P., in the chair), the accounts for the six months ending December were submitted. The output for the six months was—from the old Douglas Mine, 11,957 tons; and from the New Douglas Mine, 29,524 tons: together, 41,481 tons. The quantity sold during the same time was 45,713 tons. The directors, in their report, expressed regret that they are again unable to report any improvement in the San Francisco market. Advices received from the company's agent give little prospect of better prices being obtained for the present; but by less costly mining, and by retrenchments that have been otherwise effected, the result of the current six months' working should be less unsatisfactory than that of the last three half-years. The coal in No. 6 level, in Douglas Mine, is of excellent quality, though the seam varies much in thickness.

In the New Douglas Mine a heading has been driven from the No. 3 level to the rise, where the coal is to be found in places 16 ft. thick. The deepening of the slope, a work the directors have been very anxious to proceed with, was resumed in November last, but a heavy feeder of water was struck, and sinking was again stopped. Sufficient was done, however, to prove that the fault being cut through when sinking was suspended in 1877 is less serious than was at first supposed. A large steam-pump has now been placed in the slope, which has mastered the water, and at the last advices Mr. Bryden writes that "there is every prospect of being able to carry forward the opening up of the New Douglas Mine during the present summer more rapidly than hitherto, as we are now well provided with both winding and pumping power."

In moving the reception and adoption of the report and accounts the Chairman, after referring more in detail to the several points in the report, expressed the hope that the anticipation of improvement during the current half-year would be borne out. The market, as they had heard, was no better yet through reduction of expenses; with a larger output and slightly reduced rates of freight, a change for the better might fairly be looked for. Mr. Fry and the Hon. C. W. W. Fitzwilliam, the directors who retired by rotation, were unanimously re-elected, and Messrs. Hill and Lovelock, the retiring auditors, were also re-appointed, the proceedings then terminating with the usual complimentary votes.

HINGSTON DOWN CONSOLS.—The ordinary meeting of shareholders was held at the offices of the company, Clement's-lane, on Monday, Mr. H. P. Hall in the chair. The report of the directors stated that since the extraordinary meeting held in February, and in accordance with the resolution passed at that meeting, the operations of the mine had been considerably curtailed and the monthly cost reduced, but the accounts presented only embraced one month of such reduced expenditure. The present prospects of the mine have very much improved, and with only a moderate increase in the price of copper the property would no longer be a burden on its shareholders. The driving of the adit level was an expensive operation, and might be looked upon as a capital expenditure in opening out an entirely new mine, which from present appearances might prove to be very productive. The agent's report was of a satisfactory character, and spoke encouragingly of the future prospects of the mine. The accounts showed that the costs from Nov. 1 last to April 30 amounted to 2253*l.* 15*s.* 5*d.*, or including coals and freight, 2392*l.* 12*s.* 8*d.* The sales of ore had realised 1229*l.* 3*s.* 2*d.*, and the ore at surface on April 30 was estimated at 250*l.* The report and accounts were adopted, and the directors and auditor were re-elected.

TALYBONT (Silver-Lead).—At an extraordinary general meeting of shareholders, held in pursuance of notice at the registered offices of the company, Palmerston Buildings, Old Broad-street, on May 29 (Mr. Edward Hilton in the chair), it was moved by the Chairman and seconded by Mr. Thomas R. Bourne, and carried unanimously, "That this meeting considers that the recent discovery of a rich lode in the company's mines at Talybont, about 160 yards to the south of the old rich lode, renders it desirable to increase the capital of the company to enable the directors to further develope the mine, and the directors are hereby authorised and empowered to increase the capital of the company to 32,000*l.*, by the creation of 2000 new shares of 1*l.* each, bearing a preferential interest of 15 per cent. until the profits be sufficiently large to admit of an equal interest being paid on the whole capital of the company, after which all shares shall rank on equal terms."

[For remainder of Meetings, see to-day's Journal.]

ARGYLL COAL AND CANNEL COMPANY.—The creditors of this company are required, before June 10, to notify their names and addresses, and the particulars of their debts and claims, and the names and addresses of their solicitors, to Mr. William Hutchinson, accountant, Victoria-street, Blackburn, on behalf of Messrs. Ditchfield, Lord, and Fielding, the liquidators of the company, or they may be excluded from the benefit of any distribution made before their debts are proved.

THE ALMADA AND TIRITO CONSOLIDATED SILVER MINING COMPANY (LIMITED).

MINA GRANDE.—Capt. N. C. Morcom, March 17: The end north in the big black ore stope in the tunnel level is suspended, and the men put to stope the bottom under the new winze, in order to find the poor floor of ground which has been following us from the old sump winze. I think it very probable that we have reached a point where the ore has taken a turn downwards, and am strongly impressed that this splendid course of metal will make its appearance in the 12 fm. level. The driving of the 12 will be recommenced very shortly. We are now in a position to supply very large quantities of black ore to the furnaces.

March 24: The black ore stope below tunnel level has two pares of men working on it—one party stoping the back in a very fine lode; the others are stoping the bottom down on the poor bed of felspar, which has made for a considerable length. It is exceedingly probable that we have reached a point where the ore will make more in depth; this we shall shortly prove by a winze and the driving of the 12 north. Preparations are being made to drive the 12; the road is now being fixed, and the stuff cleared. Our prospects in this part of the mine are of an exceedingly interesting character.

March 31: To-day we shall commence to drive the 12 north in order to prove the ground ahead, and also ascertain whether the ore makes in depth below our present bottom in the big black ore stope below tunnel level. Nothing has transpired in the black ore stope during the week that calls for any particular remark.

April 7: The 12 driving north is in a very strong lode of felspar. There are also occasional spots of metal. This end is situated just under the large course of ore at and below the tunnel level. There being no end driving north at present in the big black ore stope, there is nothing new to speak of. The ground excavated in stoping has been fairly productive, yielding about 20 tons to the cubic fathom.

LA VIRGEN.—March 17: The stope in the back of the tunnel level is again suspended until the excavation can be filled up with deads. It still yields a little ore, but not as formerly.

March 31: In driving on the lode north, between the tunnel level and the 10, a little black ore has been met with. The ore excavated has paid the expenses of breaking, and will leave a little profit when stoping is begun. In driving eastwards, as has been long expected, the green or docile part of the lode in the stope above tunnel level has given out—*i.e.*, the west part of the lode. The eastern part is very solid and hard, but in general poorer than the other part has been. Our operations will now be confined in this stope to the eastern part of the lode.

April 7: The stope on the eastern part of the lode has produced a fair quantity of ore during the past week. This stope is now in communication with the Providencia stope through the old Purisima workings.

LA PROVIDENCIA.—March 17: The stope continues much as usual in productiveness. We have knocked into the old working south, where the ground appears to be going that way. It has added several feet to the stopes' length. The old back shows some good spots of black ore.

April 7: The breaking into the old Purisima workings has added to the length of this stope. This stope is not rich, nevertheless it produces a considerable quantity of oreystuff. The greatest quantity of pitanque broke in the mine is from this stope.

SAN PEDRO.—March 17: The rise was put up 8 ft. last week, and we shall probably reach the above stope in the course of 10 to 12 days, when we shall be able to increase the output of green ore.

March 31: We are spilling back through the old workings in order to communicate to the rise from tunnel level. The rise has reached the required height.

April 7: A considerable quantity of large stones from the old workings have impeded the spilling toward the new rise.

FIRST LODE.—March 17: The end north of the winze having become worthless is stopped, and the men put to stope the ore in the bottom of the end.

March 24: The lode having become poor in the bottom we are now about to stope the back, where a good branch of green ore is standing.

March 31: We shall soon take away the little ore discovered here. Ths lode is very poor.

April 7: The little ore ground discovered is being taken away, and the excavation filled up with poor stuff.

CRUZ VERDE.—March 17: The lode in the end driving north contains some good stones of green ore. The stopes in the back are yielding a fair quantity of metal, but not rich.

March 31: Cruz Verde is now worked by tributers. The shaft being very hard and poor is suspended. The end driving north has a good appearance. The stope in the back is still yielding a little docile ore. The other tribute pitches are much the same.

REMARKS.—March 17: Everything in the mine is being carried on with order and great regularity. Faithful and good labour is being done both by natives and foreigners.

April 7.—There is now every probability of the Virgen and Providencia stopes being productive of green ore for many months to come. We could not speak thus of these stopes a little while since, as we had no idea how soon they might be finished by our coming in contact with old workings. We anticipate finding a large quantity of green ore at the San Pedro old pitch, which has not been worked for over six years. With our splendid course of ore at the Mina Grande, and the pleasing prospects of it yet becoming longer and deeper, together with the Mina Grande burrows, our prospects for the future are not so gloomy as once they appeared to be.

J. H. Clemes, March 8: A very marked improvement has shown itself in the black ore prospects—an improvement that will enable me to draw up a much more hopeful report than the last one. The half-yearly report will treat fully of the future prospects of the black ore workings and of the dumps. The open trenches occupying a long time in reaching the interior of the dump on account of the continual rolling in of debris from the sides a small shaft has now been started with a view to investigate the central portions of the pile; this will throw extra light on the matter.

March 14: The figure arrived at by Capt. Morcom and myself for the old burrows is 6000 tons. I am making daily assays, so as to express a decided opinion in the report as regards quality. It will be found that a large part will do for direct beneficio, and the other part for concentration. The result of the numerous assays so far is that there is a very large proportion of $18 smalls, which is better than we expected. In the figure (6000 tons) ample allowance is made for debris which must be rejected. Taking this as a basis for calculation the dumps should yield a very good profit on working; in the report I will venture an estimate of probable profit.

March 22: Your remark concerning the arches of Tirito, 12 fathoms below surface, has had the best attention of Capt. Morcom and myself. The workings in the San Pedro stope are now about to be resumed. The ventilating rise, being nearly through, will give us additional information as to the value of this part of the mine.

April 5: I am pleased to be able to report an improvement in the main Providencia stope. There has been a further extension in length of ore ground during the present week. The quality of the ore is improved. The 12 fm. level at Mina Grande is now being driven north with a full force of hands. The communication now being made in the San Pedro will soon be finished, and will greatly assist the ventilation. We shall now begin to stope away the reserve. A slight change for the worse has taken place at Cruz Verde, the north end not looking so well. This end is a considerable distance within the Dios Padre Mine.

ST. JOHN DEL REY MINING COMPANY (Limited).—Advices received May 2, 1879, ex Neva, dated Morro Velho, April 2, 1879:—

GENERAL OPERATIONS.—GOLD EXTRACTED TO DATE.—The produce for the second division of March, a period of ten days, amounts to 13,104·8 oits.—1510·7702 ozr. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
General mineral	7,782·5	from	1238 =	6·205
ditto Praia	1,423·3	,,	255 =	5·581
Mineral free from killas	3,428·5	,,	368 =	9 317
	12,634·3	,,	1861 =	6·789
Re-tretment	470·5	,,	— =	·252
Total	13,104·8	.....	1861 =	7·041

Advices received May 18, 1879, ex Tamar (s.), dated Morro Velho, April 18:—

GENERAL OPERATIONS.—The month's return of gold produce is higher by 6153 oits. compared to that for February. This increase and improved yield per ton of 0·64 oits. is due to a larger extraction of pyritic mineral from the sections above sump, and a greater efficiency in the reduction process.

GOLD PRODUCE FOR THE MONTH OF MARCH.—The gold extracted during the above period amounts to 39,587·3 oits.=4563·7720 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
General mineral	23,831·5	from	4021 =	5·927
ditto Praia	4,125·3	,, ...	888 =	4 645
Mineral free from killas	10,131·8	,, ...	1118 =	9·062
	38,088·6	,, ...	6027 =	6·319
Re-treatment	1,498·7	,, ...	— =	·249
Total	39,587·3	,, ...	6027 =	6·568

The quantity of mineral treated exceeds that for the past month by 387 tons. In the reduction department the several results by treatment, before and after amalgamation, give also a better return than we have had for some months past.

Mineral freed from killas.....Feb. 7·657 oits. .....March 9·062 oits.
Loss on Process..... ,, 2·609 ,, ... ,, 2·333 ,,

After an extended series of experiments, the Herring, Addison, and Lyon dressing floors have been covered with thick cotton duck, specially prepared, in place of the skins and baize. By the geueral use of this material, which has now been decided upon, it is expected that an important saving of gold will be effected.

COST AND PROFIT.

Produce for March	39,587·3 oits.	
Less loss on melting	145·6 ,,	
	39,441·7	
Add amount recovered	42·2	
	39,483·9, at 7s. 9d. per oit. =	£15,300 0 2¼
Cost		7,210 13 5¼
Profit for the month		£ 8,099 6 9¼

Included in cost are the travelling expenses and other charges of 12 Chinese miners direct from California, amounting to 398*l.* 10s. 4d.

MINE.—Mineral raised from the mine ..... 6415 wagons.
Mineral quarried per borer per diem ..... 2·77 ,,
Average number of borers daily ..... 88·88
Average number of natives daily..... 174·58

This return of duty is highly satisfactory, considering the unusually low average number of borer force, which for some time past has been very irregular, consequent on the Easter holidays, and the higher wages now paid by the contractors of the Don Pedro II. Railway.

SUMP AND STOPE 279 C.—No mineral has been raised during the month from either of these sections, owing to a greater extension of the timberwork for the support of the south wall than was at first considered necessary. All doubtful scales of the wall and lode have been removed, and the ground firmly and doubly secured as far as practicable. This additional support was determined upon in view of a slightly altered system, it has been in contemplation for some time past to adopt for the better security of the south wall, and which was finally decided upon at a mine conference held on March 31.

STOPES 278 C, D, AND 277 B.—The width of the lode on the western face of section 278 D is somewhat less, being now within the "indent" or flatter body of killas on the south wall referred to in former reports. The other stopes are without alteration, and continue to supply the usual output of high grade ore.

STOPES 259 C, 258 D, AND 278 B.—These sections comprise the area from which the greater part of the weakened lode has been removed, a large proportion of which was pure pyritic mineral, chiefly derived from 258 D, and 278 B. Since the 13th no further extraction has been made (see note of Mine Conference.)

WESTERN SECTIONS.—These sections continue as before reported. The principal extraction has again been confined to the sink, which has now reached sections 275 B, and 276 A. Extent of ground between this point and forebreast of level under section 256, 5 fms. 3 ft.

GOLD EXTRACTED TO DATE.—The produce for the first division of April, a period of 11 days, amounts to 13,149·0 oits., equal to 1515·8857 ozs. troy. It has been derived as follows:—

	Oits.		Tons.	Oits. per ton.
General mineral	8,079·0	from	1411 =	5·726
ditto Praia	1,370·0	,,	293 =	4·675
Mineral free from killas	3,216·0	,,	396 =	8·121
	12,665·0	,,	2100 =	6·031
Re-treatment	484·0	,,	— =	·230
Total	13,149·0	,,	2100 =	6·261

The above return of produce, 1195 oitavas per diem, is a trifle under that for the corresponding period of last month, the amount of mineral treated being less by 185 tons, which, if taken at the average yield per ton—6·2 oits—gives a difference of 1195 oitavas. The lesser mill duty is due to several stoppages for repairs of machinery.

ELEPHANT STAMPS.—A preliminary trial of this machine was made on the 9th inst., and, as far as could be seen, the various driving and multiplying gear were found to be perfect in every respect. On May 1 it is intended to commence another trial, which will be extended for the entire month.

MINE—RETURN OF DUTY FOR THIRTEEN WORKING DAYS.

Mineral raised from the mine	3207 wagons.	
,, quarried per borer per diem	2·66	,,
Average number of borers daily	92·46	
,, number of natives daily	117·23	

THE SUMP is still under suspension, as there yet remains a large amount of the detached lode and killas to be cleared away. At the stope, west from same, stoping operations have been resumed.

B SHAFT has been communicated with; the total length of the cross-cut is 9 fathoms. It is not, however, at present intended to use this part of the shaft as a hauling medium until the communication with level under 256 has been made. The branch of lode met with in the shaft shows more indications of permanency, but on which at the present no opinion can be formed. To admit of hauling from this horizon an inclined stope on both the brow of the shaft and the bottom of the cross-cut now becomes necessary, and from which a limited amount of good mineral may be expected.

At a Mine Conference held on March 31 it was decided that, in view of the weaker state of the south wall in sections 278 D and 279 C, and which has been still further weakened by the removal of the eastern ground embraced in sections 258 D and 278 B any further extension of stoping as was then carried on would greatly tend to increase the liability to break away. It was also considered that by the present flat system of sinking the overhanging body of dense lode, compared to the strength of the sustaining walls, was deprived of that support it would otherwise have were the sump sunk at a steeper angle. The proposed alterations are—To confine the sinking through 278 D and 299 A and D, and the formation of an inclined easterly stope, and that the body of lode now standing in section 258 D and 278 B be left standing as a further support to this section of the mine. It is considered that by this alteration the large timber structure lately found necessary for this part of the mine can be greatly reduced, and that the excavation can be more firmly secured.

The Gold Troop conveying eight boxes of gold, containing 25 bars, weighing in all 39,481·5 oits.=4551·5736 ozs. troy, was dispatched for Rio and England on April 16.

N.B.—The gold has duly arrived.

The following telegrams have been received:—

On April 23—"Produce 11 days (first division of April), 13,250 oits.; yield 6·2 oits. per ton. Profit for the month (March), 8100*l.*

On May 3—"Produce 10 days (second division of April), 11,500 oitavas; yield 6·3 oits. per ton."

On May 14—"Produce for month (April), 35,500 oits.; yield, 6·3 oits. per ton-Cuiaba, 350 tons stamped; yield 2 oits. per ton."

SALES OF COPPER ORES.

COPPER ORES SOLD AT THE CORNWALL TICKETINGS FOR THE QUARTER ENDING MARCH 31, 1879:—

Mines.	Tons.	Amount.
South Caradon	1320	£5,850 19 6
Devon Great Consols	2522	4,972 16 0
Mellanear	1580	4,753 19 6
West Tolgus	692	3,329 6 0
Marke Valley	1015	3,324 16 6
Gunnislake (Clitters)	631	2,139 19 0
Glasgow Caradon	576	2,093 10 6
East Pool	743	1,243 4 6
Phœnix	130	1,165 10 0
West Seton	342	1,041 9 6
Levant	140	736 8 6
Bedford United	171	585 5 6
Wheal Crebor	130	318 17 0
Hingston Down	141	293 5 6
Gawton	137	170 1 6
New Cook's Kitchen	32	132 16 0
East Caradon	30	129 15 0
Wheal Basset	28	125 6 0
Carn Brea	41	109 13 6
South Tolcarne	31	103 1 6
South Crofty	40	93 0 0
West Basset	28	68 12 0
Wheal Comford	21	63 0 0
North Treskerby	25	60 12 6
Wheal Agar	12	58 16 0
Penstruthal	11	34 13 0
West Roskear	21	30 9 0
East Wheal Calstock	7	19 5 0
Rule's Precipitate	1	8 4 0

COMPANIES BY WHOM THE ORES WERE PURCHASED.

Vivian and Sons	2310	£7,227 9 3
P. Grenfell and Sons	1282	4,697 18 3
Nevill, Druce, and Co.	1497	4,184 14 3
Williams, Foster, and Co.	3738	12,220 13 6
Mason and Elkington	1537	3,903 19 9
C. Lambert and Co.	234	844 17 0
Total	10598	£33,029 12 0

COPPER ORES SOLD AT THE SWANSEA TICKETINGS, FOR THE QUARTER ENDING MARCH 31, 1879.

BRITISH.

Mines.	Tons.	Amount.
Berehaven	90	£ 495 0 0
Emily	34	106 19 6
Total	124	£ 601 19 6

COLONIAL.

Betts Cove	1648	£5,297 0 6
Union	659	2,39; 8 6
Australian	25	518 2 6
Total	2332	£8,205 11 6

FOREIGN.

Caveira	1140	£4,946 13 6
Bogalho	197	2,894 3 6
Virneberg	202	1,619 19 0
Algerian	353	911 13 6
Telhadella	76	355 15 0
Cetine	65	250 16 6
Sobral	51	344 8 0
Total	2084	££11,323 9 0

RECAPITULATION.

British	124	£ 601 19 6
Colonial	2332	8,205 11 6
Foreign	2084	11,323 9 0
Sundries	618	8,503 8 6
Total	5158	£28,634 8 6

COMPANIES BY WHOM THE ORES WERE PURCHASED.

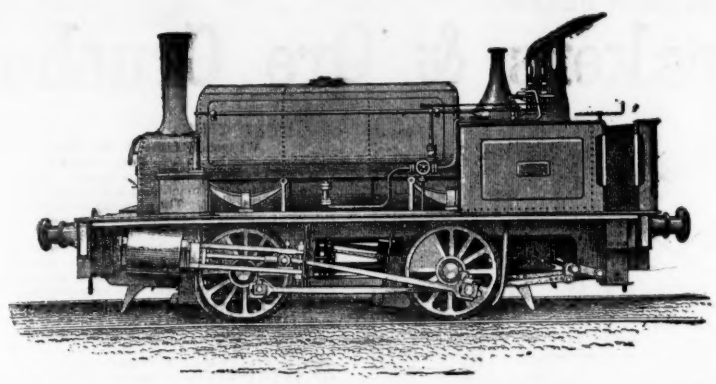
Copper Miners Company	799	£2,400 12 0
P. Grenfell and Sons	312	4,664 3 0
Nevill, Druce, and Co.	208	2,763 3 0
Vivian sad Sons	155	1,437 18 0
Williams, Foster, and Co.	1404	8,539 16 9
Mason and Elkington	1384	4,674 16 0
Charles Lambert and Co.	51	473 2 0
Sweetland and Co.	425	1,595 5 3
Total	5158	£28,634 8 6

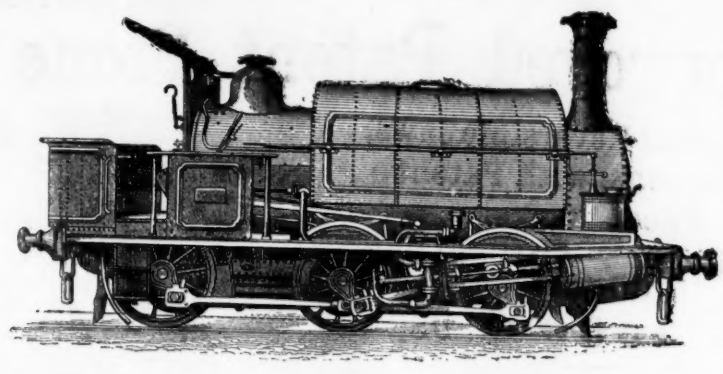
HUDSWELL, CLARKE, & RODGERS,

RAILWAY FOUNDRY, HUNSLET, LEEDS,

ARE NOW MAKING A GREATLY IMPROVED CLASS OF **TANK LOCOMOTIVE,** EITHER ON FOUR WHEELS OR SIX, OF VARIOUS GAUGES,

IN WHICH EXTRA STRENGTH AND DURABILITY ARE COMBINED WITH SIMPLICITY AND ECONOMY IN REPAIRS.





FIRE BOXES—Copper. TUBES—Brass. TYRES—Steel. AXLES—Steel. BOILER PLATES AND MACHINERY of the best Yorkshire Iron.
NEW LOCOMOTIVES, with Cylinders 8 in., 10 in., and 13 in. diameter, always in stock or in progress. SECOND-HAND LOCOMOTIVES, of various sizes, FOR SALE OR HIRE.
PRICES AND SPECIFICATIONS ON APPLICATION

Awarded Gold Medal, Paris Exhibition, 1878.

HADFIELD'S STEEL FOUNDRY COMPANY.

FIRST PRIZE MEDALS AT LEEDS, MANCHESTER, AND WREXHAM EXHIBITIONS, 1875 AND 1876.

ATTERCLIFFE, SHEFFIELD,

DEVOTE THEIR EXCLUSIVE ATTENTION TO THE MANUFACTURE OF

CRUCIBLE STEEL CASTINGS,

FOR

Engineering & Mining Purposes,

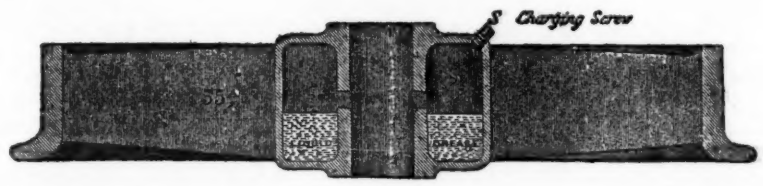
AND ARE THE SOLE MAKERS OF

Hadfield's Self-oiling Steel Wheels

(PATENTED).

These possess advantages held by no other wheels, and are specially adapted for Collieries, Ironstone Mines, Slate Quarries, Lead and Copper Mines, &c., &c., where LOOSE Wheels are used (*i. e.*, those revolving upon their own axles). By the old system of lubricating loose wheels, it is well known thisis attended with constant labour and excessive waste; and as so little of the grease or oil applied reaches the wearing surfaces, and as re-greasing can only take place at fixed parts of the workings, the bosses of the wheels and bearings of the axles soon become dry, and cut each other: thus causing enormous wear and tear, and necessitating extra labour, haulage power, and expense. These and numerous other defects are entirely remedied by these wheels, as will be readily seen from the following illustrations and advantagesclaimed.

N.B.—Price per Set of Wheels and Axles (ready for nse) forwarded on receipt of—1. Diameter of Wheel on tread. 2. Width of tread. 3. Diameter and total length of axle, also whether No. 74 or 75. 4. Rail gauge. 5. Rolling load.



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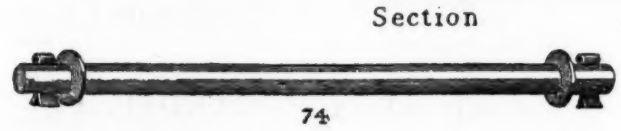

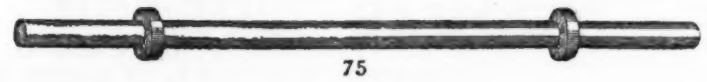

This Advertisement is varied from time to time.

The following are a few of the numerous Advantages claimed by the above Self-oiling Wheels :—

1.—Two-thirds (at least) less grease or oil is required than at present used by any known method of lubricating Mining Wagons, whether by hand, machine, or otherwise.
2.—These wheels effect a very great saving in haulage power; also wear and tear—being so constructed as never to allow the bearings to become dry. The revolving of the wheel leads out the oil as required, and immediately the wagon stops the lubricator ceases its action,
3.—No waste of grease can occur, no matter in what position the wagon may be placed, when discharging its contents (even if up side down); and when the wagons are not in use it is utterly impossible for any grease to escape, as it is all stored below the outlet (as shown above).
4.—When once these wheels have been charged with liquid grease (which can be done by any inexperienced person) they do not require any attention or re-greasing whatever for several weeks or even months afterwards, in proportion to the distance travelled.
5.—These wheels can be readily fixed to any description of either wood or iron corves now in use, whether the wheels are upon the inside or outside of the frame.
6.—They are exceedingly simple in construction, have no detail, and are not liable to get out of order.
7.—They possess great strength, durability, and extreme lightness, being made of CRUCIBLE STEEL.

Where FAST Wheels and Axles are adopted instead of Loose ones, *as shown above,* **see our Illustrated Sheets of Drawings Nos. 2 and 3 of**

Crucible Steel Wheels and Axles, fitted complete by Hadfield's Patent Method, and Hadfield's Self-oiling Pedestals.

MACHINE MOULDED STEEL GEAR WHEELS OF EVERY DESCRIPTION.

Printed by RICHARD MIDDLETON, and published by HENRY ENGLISH (the proprietors) at their offices, 26, FLEET STREET, E.C., where all communications are requested to be addressed.—*May 31, 1879.*